THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF BUMIPUTERA-CONTROLLED COMPANIES IN MALAYSIA

FAIRUZ SOFIA KAHARUDDIN

MASTER OF SCIENCE (FINANCE)
UNIVERSITI UTARA MALAYSIA
AUGUST 2018

THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF BUMIPUTERA-CONTROLLED COMPANIES IN MALAYSIA

BY

FAIRUZ SOFIA KAHARUDDIN

Thesis submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in Partial Fulfilment of the Requirement for the Master of Science (Finance)

Pusat Pengajian Ekonomi, Kewangan dan Perbankan
SCHOOL OF ECONOMICS, FINANCE, AND BANKING
Universiti Utara Malaysia

PERAKUAN KERJA KERTAS PENYELIDIKAN
(Certification of Research Paper)

Saya, mengaku bertandatangan, memperakukan bahawa
(I, the undersigned, certified that)
FAIRUZ SOFIA BT KAHARUDDIN (818101)

Calon untuk Ijazah Sarjana
(Candidate for the degree of)
MASTER OF SCIENCE (FINANCE)

telah mengemukakan kertas penyelidikan yang bertajuk
(has presented his/her research paper of the following title)

THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF BUMIPUTRA-CONTROLLED COMPANIES IN MALAYSIA

Seperti yang tercatat di muka surat tajuk dan kulit kertas penyelidikan
(as it appears on the title page and front cover of the research paper)

Bahawa kertas penyelidikan tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan.
(that the research paper acceptable in the form and content and that a satisfactory knowledge of the field is covered by the dissertation).

Nama Penyelia (Name of Supervisor) : **DR. AHMAD RIZAL BIN MAZLAN**

Tandatangan (Signature) : _____

Tarikh (Date) : **8 AUGUST 2018**

PERMISSION TO USE

In presenting this dissertation/project paper in partial fulfilment of the requirements for a Post Graduate degree from the Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying this dissertation/project paper in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor or in their absence, by the Dean of Othman Yeop Abdullah Graduate School of Business where I did my dissertation/project paper. It is understood that any copying or publication or use of this dissertation/project paper parts of it for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the UUM in any scholarly use which may be made of any material in my dissertation/project paper.

Request for permission to copy or to make other use of materials in this dissertation/project paper in whole or in part should be addressed to:

Dean Othman Yeop Abdullah Graduate School of Business
Universiti Utara Malaysia
06010 Sintok
Kedah Darul Aman

ABSTRACT

The relationship between working capital and profitability cannot be ignored because the improvement in the profitability is necessary for the survival of a firm. Therefore, the objective of this study is to investigate the relationship between working capital management and profitability of Bumiputera-controlled companies in Malaysia. The period of this study is from year 2006 until 2012. This study uses a panel data of ninety-four (94) Bumiputera companies listed on Kuala Lumpur Stock Exchange. Cash conversion cycle and its components are used as measures for working capital management. The main theory used is the trade-off theory. The trade-off theory provides support for manager's trade-off between profitability and risk associated with the level of current asset and liabilities. Findings from the panel data regression analysis reveal that inventory conversion period and receivable collection period are significantly negatively correlated to profitability. This suggests that the shorter the period, the higher the profitability of Bumiputera-controlled companies tends to be. However, cash conversion cycle is significantly and positively correlated to profitability, suggesting that the longer the cash conversion period, the higher the profitability. The payable collection period is not significantly correlated to profitability. Finally, the study provides managerial implications, and suggests the direction for future research.

Keywords: Bumiputera-controlled companies, working capital, working capital management, working capital components, profitability

ABSTRAK

Hubungan antara modal kerja dan keuntungan tidak boleh diabaikan kerana peningkatan keuntungan amat diperlukan untuk terus memajukan perniagaan. Oleh kerana itu, objektif kajian ini ialah untuk mengkaji hubungan antara pengurusan modal kerja dan keuntungan syarikat-syarikat kawalan Bumiputera di Malaysia. Tempoh masa untuk kajian ini adalah dari tahun 2006 hingga 2012. Kajian ini menggunakan data panel sebanyak 94 buah syarikat kawalan Bumiputera yang tersenarai di Bursa Saham Kuala Lumpur. Kitaran penukaran tunai dan komponen-komponennya digunakan sebagai kaedah untuk menilai pengurusan modal kerja. Teori utama yang digunakan adalah teori *trade-off*. Teori *trade-off* adalah teori yang menyokong tindakan pengurus untuk memilih antara keuntungan dan risiko yang berkaitan dengan tahap asset semasa dan liabiliti semasa. Hasil analisis regresi data panel mendedahkan bahawa tempoh penukaran inventori dan tempoh kutipan belum terima mempunyai hubungan negatif yang signifikan dengan keuntungan. Ini bermakna, semakin singkat tempoh, maka semakin tinggi keuntungan syarikat-syarikat kawalan Bumiputera. Sementara itu, kitaran penukaran tunai didapati mempunyai hubungan positif yang signifikan dengan keuntungan. Ini memberi gambaran bahawa tempoh kitaran penukaran tunai yang lebih panjang mendorong keuntungan syarikat yang lebih tinggi. Tempoh kutipan pemiutang didapati tidak mempunyai hubungan yang signifikan dengan keuntungan. Akhir sekali, implikasi terhadap corak pengurusan, serta cadangan hala tuju kajian akan datang turut dikemukakan di dalam kajian ini.

Kata kunci: syarikat-syarikat kawalan Bumiputera, modal kerja, pengurusan modal kerja, komponen modal kerja, keuntungan

ACKNOWLEDGEMENT

Praise to Allah S.W.T, the Most Merciful and the Most Compassionate for granting me the faculty, drive and resources in completing this modest work in my never-ending quest for knowledge. Salawat to His Messenger, Prophet Muhammad S.A.W and to his family and companions.

My highest appreciation to my beloved parents Mr. Kaharuddin Arek and Mdm. Dermawati Sulaiman, I am forever indebted to them for their never-ending love and supports and for instilling in me the value of a good education from my early years. I pray that Allah protect and guide them through all their endeavors.

I wish to extend my sincerest gratitude to my supervisor, Dr. Ahmad Rizal bin Mazlan for his time and effort in diligently supervising this study. His support, patience and constructive comments have been tremendous value to this thesis.

I am equally thankful to all Universiti Utara Malaysia lecturers and all the administrative members whom I have had the opportunity to learn so much from throughout the duration of my master study. Finally, special thanks to my colleagues and friends for their understanding and encouragement.

May Allah reward them by plentitude of blessings. Ameen.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURE

LIST OF ABBREVIATIONS

BCCs	= Bumiputera-Controlled Companies
WCM	= Working capital management
CCC	= Cash conversion cycle
ICP	= Inventory conversion period
RCP	= Receivable collection period
PCP	= Payable collection period
ROA	= Return of Asset
SIZE	= Size of the firm
SG	= Sales growth
DR	= Debt Ratio

CHAPTER 1

INTRODUCTION

1.0 Introduction

Working capital management (WCM), which comprises of the management of current assets and current liabilities, has a crucial and decisive role for companies as a result of its impact on profitability and liquidity. Due to its vital role, WCM has become a focus in many empirical studies in various countries.

One of the main financial duties for any institution is to maintain a proper level of liquidity to make sure that it fulfills its commitments on time. An institution aims to maintain a sufficient level of current assets, especially accounts receivable and inventory. Additionally, it aims to control accounts payable and monitor them by making sure that there is a proper variation between them within the limit that ensures the institution is not subjected to the risks of failing in fulfilling its commitments in the short term.

There are two common concepts in working capital. The first concept is the gross working capital concept, known as the institutional total investments in current assets which are changed into cash within one year period. These assets are made up of securities, receivable accounts, cash and inventory. The second concept is the net working capital which is the deduction of current assets with current liabilities (Qazi

et al., 2011) The significance of this specification comes by quantitatively providing a measurement of the level of confidence in the adequacy of current assets to fulfill the short-term commitments. It is fit as a measurement utilized by creditors to familiarize themselves with the strong financial position of the institution and the capability of its liquidity to fulfill the obligations. Whenever the amount of current assets is greater compared to current liabilities, the company has the ability to meet its obligations easily (Khanqah *et. al*., 2012).

Numerous studies have examined the relationship between working capital and profitability in the growing and expanding market. For example, a prior research by Dong and Su (2010) shows a negative relationship between working capital and profitability using general moment method. The study used 130 firms listed in the Vietnam stock market within three years starting from 2006 to 2008. Similarly, the findings in Deloof (2003) also exhibited a negative, but insignificant relationship between working capital and gross operating income of 1009 non-financial firms of Belgium starting from 1992 to 1996. Likewise, Lazaridis and Tryfonidis (2006) analyzed listed companies in the Athens Stock Exchange, and obtained a significantly negative relationship between working capital and gross operating profit in a sample of 131 firms for the period from 2001 to 2004. Other studies which have found similar negative relationship between those variables are Saghir *et al*. (2011); Garcia and Martinez. (2007); Gul *et al.* (2013); Mansoori and Muhammad (2012); Nimalathasan (2010); and Ray (2012).. Therefore, the negative relationship between profitability and cash conversion cycle used to measure the efficiency of WCM showed a longer cash conversion cycle, and smaller profitability, and these findings have verified the

trade-off theory. These studies also indicated that managers are able to generate profit for their shareholders by minimizing the cash conversion cycle to an acceptable amount. From the review of the previous literature, contradicting findings on the variables of working capital management with firm profitability have been documented. Gill *et al.* (2010) explored the impact of capital structure toward the profitability of 272 service and manufacturing firms in the US for a period of 2005 to 2007 and found that there is a positive significant relationship between working capital and profitability.

This signifies that in general, companies are in a situation to utilize their short-term assets and liabilities to generate profit, and hence increasing their value. Ali (2011) also documented a positive relationship between working capital and firm profitability among 160 Nigerian textile firms located in Pakistan for five years from 2000 to 2005. Moreover, Sharma and Kumar (2011) also reported significant positive relationship between working capital and profitability of 263 Indian firms from the year 2000 to 2008. Among other literature that have found positive relationship between working capital and profitability are Ademola (2014); Akinlo and Olufisayo (2011); Abuzayed (2012); Baveld (2012); Rimo and Panbunyuen (2010); and Karadagli (2012).

Therefore, the positive relationship between working capital and profitability shows that working capital measured by cash conversion cycle (CCC) can be optimized for maximum profitability. Hence, when CCC becomes longer, profitability increases.

Previous studies also indicate that managers are able to generate value for their shareholders by increasing the CCC within a tolerable range.

In Malaysia, a similar research has been conducted by Mohamad and Saad (2010) who found that managing working capital requirement is important for the advancement of market value and profitability of the firm. In another study, Wasiuzzaman and Arumugam (2013) postulated that working capital investments for the public listed firms in Malaysia which have the most investments in operating working capital are determined by economic development, younger and smaller firms with less tangible assets, low leverage, high immediate sales growth, high operating cash flows, less volatile revenues, and low-level asymmetric information. The study deduced that different firm characteristics have distinct policies for working capital to suit their situation. They also mentioned that WCM of Malaysian firms is unsatisfactory for several years ago.

Malaysia is known as one of the most successful developing countries in the region (BNM, 2014). In order to attain its vision to become a developed country by the year 2020, contribution from Malaysian public listed companies (PLCs) is needed by the government to ensure gradual increase of the country's gross domestic product (GDP) and subsequently reaches an average annual growth rate of 7% in 30 years to come. The PLCs should excel in their respective businesses and develop well in the future to support the vision of the country. In the article "Johari: 132 firms listed on Bursa are Bumi-controlled companies" (2015, October 1) it was reported that Bumiputera-

controlled companies (BCCs) made up 132 or 14.4% of 919 companies listed in Bursa Malaysia. The report further stated that the number of BCCs rose 31% with a very high percentage as the overall number of companies listed on Bursa Malaysia has declined 2.3%.

The significant role of BCCs has motivated the researcher to examine its working capital management and also financial performance. This research seeks to determine the extent of the relationship between working capital and its components with profitability of BCCs in Malaysia. It is expected that determining the impact of WCM through its elements towards profitability of BCCs in Malaysia would provide policy recommendations and solutions to problems and at the same time improve the profitability levels.

1.1 Background

1.1.1 Working Capital Management (WCM)

Net working capital is defined as the difference between current liabilities and current assets. Among the activities included in working capital management are management of inventories, receivables, cash and payable.

From corporate finance perspective, good working capital management of a firm is crucial because short term financing affects the capital investment of a firm. Effective working capital management is able to maintain an optimal level of current assets and current liabilities.

WCM serves as a determinant for the adequacy of cash flow for paying back current liabilities and operating expenses of a firm. A firm also must have a minimum net working capital position as required by most of the financial institutions which can influence a firm's ability to obtain debt financing.

Mohamad and Saad (2010) stated that managing working capital requirement is very essential to ensure the improvement of the market value and profitability of a firm. WCM should be the most important factor to be considered by a firm in order to ensure that it operates efficiently and effectively.

Many corporations that appear to have efficient WCM earn profits over the year (Appuhami, 2008). Managing working capital efficiently is extremely important for short-run solvency for survival of the firm. Managing working capital efficiently can help the firm to respond to any unforeseen changes in market variables. However, the strategy of efficient management for working capital is different according to industry, nature of business, strategy and others. Thus, a firm must identify the components in working capital and understand how the components may affect the profitability of a firm.

1.1.2 Components of Working Capital

Components in working capital are payable collection period, inventory conversion period, receivable collection period and cash conversion cycle.

Payable collection period (PCP) refers to the number of days taken by a firm to settle its payable account, or in other words, to pay its suppliers. A firm's ability to pay debt depends on its profitability (Sharma and Kumar, 2011). More profitable firms have stronger ability to pay creditor than lower profitable firms which generally need longer time to pay back the creditors.

Inventory conversion period (ICP) refers to the number of days taken by a firm to turn its inventory into sales. Generally, shorter ICP indicates better performance of the company through higher profitability. However, the number of days is different according to industry and the nature of business.

Receivable collection period (RCP) refers to the number of days taken by a firm to gather its receivables or invoice. According to corporate finance theory, the lesser the number of days of account receivables, the more it adds to the profitability of the firm, implying that a reduction in RCP increases firm profitability. To ensure the smooth running of cash in a business, it is very important to collect accounts receivable as soon as possible. If a company can quickly turn its sales into cash, it can use the cash again for investment purpose. Longer RCP indicates that most of firm's sales is on credit and it takes longer time to collect the payment.

Cash conversion cycle (CCC) is the sum of day's accounts receivable plus days inventory held minus day's accounts payable. CCC is frequently used to measure the effectiveness of working capital management as it signifies the average length of time

taken by a company to turn its resource input into cash flow. CCC also provides a clearer view on the ability of a firm to cover its current debt.

It can be concluded that longer duration of CCC will cause high investment in working capital (Nobanee *et al*., 2011). In contrast, shorter length of cash conversion cycle can lead to high profitability as it increases the efficiency of working capital usage and also reflects high liquidity of firm. It also reflects that the firm has less obligation to borrow, thus will benefit on the price discounts on cash purchases. Shortening the length of CCC can be done by reducing the number of day's inventory held or days of collecting the receivables.

1.1.3 Overview of Bumiputera-Controlled Companies (BCCs)

According to Treasury Circular of Malaysia (2017), a company is categorized as Bumiputera-controlled company (BCC) by fulfilling these criteria:

i. For single owner: at least 35% of equity of the company is owned solely by an institution/group/company/individual Bumiputera shareholder; or

ii. For combination of several owners: at least accumulated 35% of its equity are owned by combination of more than one institution/group/company/individual Bumiputera shareholder

iii. For Non-Bumiputera shareholder: they are not entitled to own solely more than 10% of equity of the company.

iv. For combination of several Non-Bumiputera shareholders: they are not entitled to own accumulatively more than 24% equity of the company.

v. The shareholder of the Bumiputera group is the legitimate owner and every Bumiputera party may exercise the voting power which is attached to his/her/its shareholding without any influence.

vi. The Chairman, Chief Executive Officer or Managing Director and at least 51% of the board members of the company must be Bumiputera individuals.

vii. At least 51% of the management, professional and supervisory staff comprises Bumiputera individuals.

1.2 Problem Statement

The Asian financial crisis has grabbed the attention of most researchers due to its massive impact on Malaysian firms, where most of them recorded negative earnings (Ariff and Abubakar, 1999). It was reported in the Asian Economic Review (2000) that the BCCs were, to a large extent, affected during the Asian financial crisis. These companies were left vulnerable due to the uncertainties in the financial environment.

The report further stated that BCCs were too dependent on the government for their survival, and a huge amount of capital was needed to fund infrastructure construction and large scale projects. The capital was often obtained through bank loans, which means the difficulties experienced by the businesses could have easily multiplied.

According to Marimuthu (2010), from the financial profitability standpoint, BCCs have failed to exhibit upward trends in company performance until 2005. Mismatch issue in financial decisions is the main reason that caused BCCs unable to reboot after the financial crisis. Short term financing has been used for long term investment, and, therefore, in the event of a crisis, companies need to repay their debts over the short run, although the returns can only be generated in the long run. Therefore, BCCs are unable to generate sufficient returns, and they tend to have high financial leverage.

Working capital provides a signal as to whether companies are capable to run their daily operations smoothly (Charitou *et al*., 2010). Working capital also shows the level of liquidity of a firm, where it measures the amount of cash available for the daily business operations, settlement of regular bills, and also unexpected or emergency expenses. According to Agha (2014), it is important for a firm to make sound decision in WCM because it affects both the profitability, and the liquidity, of a firm.

Most of the discussions related to BCCs are closely connected to their financial performance. Therefore, there is a need to further explore the financial performance of BCCs with regard to their WCM in relation to financial profitability, which is often measured by return on asset.

Several researches have previously examined the financial performance of BCCs. For example, Marimuthu (2010) reports that the impact of crisis and post-crisis periods

on the performance of BCCs over the period of 1996 to 2005 is evident, where the companies faced both short run and long run issues due to financial crisis.

Halim *et al*. (2014) looks into the management issues and financial performance of Bumiputera construction firms. The findings show that, in general, the firms have inadequate amount of capital to finance their projects, generate small amount of profits, have high debt level, and are less efficient in managing their assets. Additionally, Aminudin (2000) analyses the corporate performance and ownership structure of BCC and non-BCCs listed on the KLSE from 1993 to the first quarter of 1997, just prior to the economic downturn. The results suggest that the ownership structure would not impact the performance of accounting profit of the companies.

Yatim *et al*. (2006) examined the performance of BCCs for the period of 1986 to 2001 in terms of paying higher audit fees due to the weaker governance practices. However, the results contradict the previous reports whereby BCCs were found to have better internal corporate governance practices compared with non-BCCs.

In-line with the discussion above, and to the researcher best knowledge, there is hardly any research that examines the relationship between working capital management and profitability of BCCs in Malaysia. Therefore, this study intends to address the gap in the literature by examining the relationship of working capital management and profitability of BCCs in Malaysia.

1.3 Research Questions

Based on the issues highlighted earlier, the following research questions are developed.

1. What is the relationship between cash conversion cycle and Malaysian Bumiputera-controlled companies' profitability?
2. What is the relationship between inventory conversion period and Malaysian Bumiputera- controlled companies' profitability?
3. What is the relationship between receivable collection period and Malaysian Bumiputera- controlled companies' profitability?
4. What is the relationship between payable collection period and Malaysian Bumiputera- controlled companies' profitability?

1.4 Research Objectives

The most important objective of this study is to seek the relationship between working capital management and firm profitability of Malaysian Bumiputera-controlled companies. The specific research objectives are:

1. To analyze the relationship between cash conversion cycle and Malaysian Bumiputera-controlled companies' profitability.
2. To examine the relationship between inventory conversion period and Malaysian Bumiputera-controlled companies' profitability.
3. To evaluate the relationship between receivable collection period and Malaysian Bumiputera-controlled companies' profitability.

4. To examine the relationship between payable collection period and Malaysian Bumiputera-controlled companies' profitability.

1.5 Significance of the study

The present study is important as WCM has an impact to the profitability of any company. Therefore, more empirical studies on the relationship between working capital and profitability are necessary, particularly for the developing countries. Numerous studies have been carried out on working capital in the developed countries, but such studies are scarce in Malaysia. This is shown by Wasiuzzaman and Arumugam (2013) and Zariyawati *et al*. (2009) which stated that there is a lack of study for working capital in Malaysia. In fact, there is no single study which specifically measures the relationship between working capital and profitability among BCCs. Hence, this study intends to explore the gap in the previous studies on working capital specifically among BCCs, and thus contribute to the body of knowledge, especially among the academicians and finance researchers.

Moreover, this study is expected to disclose the relationship between working capital and profitability among BCCs which can be beneficial in comprehending the dynamics and impact of collection policy, inventory policy, as well as payment policy on the profitability of BCCs. Supposedly, the results drawn from this study with respect to BCCs could be useful to the companies in order to strategize and increase their profitability.

Due to series of problems, challenges and poor performance from BCCs as highlighted previously by Asian Economic Review (2000) and other previous literatures, the current study is expected to reveal crucial findings in order to help and guide the financial managers of the BCCs based on the behaviour of the variables studied which relate to future operations and performance.

1.6 Scope and Limitations of the Study

This study emphasis on the components of working capital management , namely payable collection period (PCP), inventory conversion period (ICP), receivable collection period (RCP) and cash conversion cycle (CCC) and their relationship with return on asset (ROA). The data of this study were limited only to the 94 Bumiputera-controlled public listed companies out of 132 companies from year 2006 to 2015. It is because data for the rest of the Bumiputera-controlled companies for ten years records were unavailable.

1.7 Organization of the Thesis

This study constitutes of five chapters. Chapter 1 presents the background of the study and describes the problem statement, as well as research questions, and research objectives, significance of the study and scope of the study. Meanwhile, Chapter 2 reviews previous studies associated to the relationship between working capital and firm's profitability. Besides that, Chapter 3 explains the research methodology, including the analysis process and variable measurements. Chapter 4 presents the discussion and results obtained from the analysis. Finally, Chapter 5

provides conclusion, together with suggestions and recommendations for carrying out future research.

1.8 Summary of the Chapter

The chapter started with a general background of the study where a basic foundation of the study was laid. It was followed by the statement of the research problem, the researcher here tried to bring-out the prominent issues that justify the study and the gap it is intended to fill. This was followed by the research objectives, questions, its scope and limitations, the significance of the study and organization of the thesis.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter provides a review of previous literature on the relationship of working capital management with profitability. In addition, it also frames out several issues about Bumiputera-controlled companies.

2.1 Underpinning theory

This section discuss the theory on working capital and its relation with firm's profitability.

2.1.1 Trade-off theory

WCM involves a trade-off between profitability and risk of the firm and therefore the trade-off theory is was applicable in discussing the relationship between a firm's working capital management and the profitability. According to Abuzayed (2012) the basic ingredients of the theory of WCM focuses on the trade-off between profitability and risk which is associated with the level of current asset and liabilities. Smith (1980) signalled the importance of the trade-offs between the dual goals of working capital management, particularly between liquidity and profitability.

According to Raheman and Nasr (2007), although the ultimate objective of any firm is to maximize the profit, preserving liquidity of the firm is an important objective too. The problem is that increasing profits at the cost of liquidity can bring serious problems to the firm. Therefore, there must be a trade-off between these two objectives of the firms. Dittmar *et al.* (2002) indicate that when firms are liquid, they generate huge amount of net working capital, followed by diminishing level of profitability. However, in a situation of over trading, the trade-off theory highlights that the firms will be confronted with the problem of holding too little liquid once the firms generate high level of profitability. Therefore, there is plausibility of negative relationship between liquidity and profitability.

2.2 Dependent Variables

2.2.1 Profitability

As a proxy for financial performance, profitability can be measured using return on assets (ROA) which is calculated as the ratio of net income to total assets. Many researchers have utilized ROA which measures the level and intensity of returns generated by a firm in utilizing its total assets.

As the dependent variable, ROA is used in this study as a measure of firm profitability and it is calculated as the ratio of earnings before interest and tax (EBIT) to total asset. Bulin *et al.* (2016) used ROA to examine the effect of WCM on profitability of Malaysian listed companies. In addition, Sin *et al.* (2017) and Wasiuzzaman (2015) also used ROA to measure the firms profitability. ROA is

also employed as a proxy for firm profitability in Gill *et al.* (2010) which examined the relationship between CCC and firm performance in the US.

Mohamad and Saad (2010) conducted a study in Malaysia to evaluate the effect of market valuation and profitability for Malaysian firms. The researchers used return on invested capital and return on asset to measure firm profitability. They conducted regression analysis for a sample of 172 companies with total observations of 860. The samples consisted of listed companies that were randomly selected from the main board of Bursa Malaysia from 2003 to 2007. The researchers found that there was significant negative relationship between working capital variables with firm performance. However, other studies used another measurement for profitability. For example, Yunos *et al*. (2015) measured firm profitability using return on asset and gross operating income. While, Deloof (2003), Lazaridis and Tryfonidis (2006), and Gill *et al*. (2010) employed gross operating profit as a measurement for their dependent variable. Net operating profit has been used to measure firm profitability as reported by Ademola (2014), Usama (2012) and Mathuva (2010). On the other hand, Malik and Bukhari (2014) used return on equity to represent the profitability, whereas Ching *et al.* (2011) used return on sales and return on asset for their research.

In addition, Albdwy *et al*. (2014) analyzed the effect of working capital management on the profitability of Malaysian Shariah-compliance and non Shariah compliance firms. The researchers used return on equity (ROE) as a profitability proxy, while cash conversion cycle (CCC) is used as a proxy of working capital management to

examine how profitability was related to working capital management. The analysis was carried out by the researchers who made a report in which there was significant negative relationship between cash conversion cycle and ROE for both Shariah compliance and non Shariah compliance firms. The overall result indicated that both types of firms have applied the working capital management theory of shortening the cash conversion cycle quite successfully and thus increased the profitability of the firms.

2.3 Independent Variables

2.3.1 Measurement of Working Capital Management

Working capital is defined as the overall investment of a firm in current assets or assets that it is expected to be changed into cash during a year or fewer than that (Keown *et al*., 2005). The WCM is believed to have a trade-off nature where excessive working capital would result in high liquidity in a corporation to fulfill its short term obligation, but simultaneously, it would also reduce the firm profitability due to switching of customers. An effective WCM assists to prevent financial crises, and thus increase the profitability and enhance the firm value (Kaur and Singh, 2013).

WCM is computed as a function of cash conversion cycle (CCC), receivable collection period (RCP), inventory collection period (ICP), net trading cycle (NTC), and payable collection period (PCP) of the firm (Raheman *et al*., 2010). According to Lazaridis and Tryfonidis (2006), the best way to describe the WCM is through CCC.

Management of working capital is to look at managing cash, receivables, inventories and payables (Charitou *et al*., 2012).

2.3.1.1 Cash Conversion Cycle

Cash conversion cycle (CCC) means the period of time between the payment for raw materials by a company and collection of payment from the customer (Brealey and Myers, 2003).

CCC calculates the total of the average number of days of outstanding sales on both receivables and inventories accounts fewer the average days number of sales presented by the payable account of the firm (Keown *et al*., 2005), while net trade cycle computes the number of sales of days which a firm had to fund its net working capital investment. CCC is a measurement for the period of a company to get cash if it makes large investment in resources for the purpose of expanding sales of customer (Charitou *et al*., 2012).

Furthermore, Sin *et al.* (2017) investigated Malaysian listed manufacturing companies for the duration of 6 years starting 2007 to 2012. The study used regression analysis on 122 companies and found that CCC has a significant positive relationship with the firm's profitability. Similarly, Bulin *et al.* (2016) found a significant positive relationship between CCC and ROA. With a sample of 50 companies registered in Bursa Malaysia from 2011 to 2015, they used Pearson correlations and regression analysis to analyze the data. Likewise, Ademola (2014) reported that 120

Nigerian listed companies from 2002 to 2011 have significant positive relationship towards CCC and firm's profitability. Sharma and Kumar (2011) also achieved similar significant positive relationship in Indian firms with a sample of 263 firms from 2000 to 2008.

On the contrary, Zariyawati *et al.* (2009) investigated Malaysian listed companies that consist of six different economic sectors for the period of 1996 to 2006. The study showed that reducing CCC results to profitability increase. Similarly, Dong and Su (2010) recorded a negative relationship of CCC with firm profitability. The study employed 130 Vietnamese listed firms in the stock market for three years from 2006 to 2008. Deloof (2003) also showed a negative, but insignificant relationship for 1009 Belgian non-financial firms from 1992 to 1996 for CCC and gross operating income (GOI), a proxy for the firm's profitability. Likewise, Lazaridis and Tryfonidis (2006) analysed companies which were listed in the Athens Stock Exchange and found a significant negative relationship between the CCC and gross operating profit (GOP) representing profitability with a sample of 131 firms from 2001 to 2004.

Moreover, Akinlo and Olufisayo (2011) revealed a similar positive significant result on Nigerian listed companies, which is in agreement with Gill *et al.* (2010) also reporting a positive significant relationship between CCC and GOP. The study employed a sample of 272 companies from 2005 to 2007 and used descriptive statistics, correlation and regression (OLS) analysis. Based on the result of Gill *et al.* (2010), an increase in CCC leads to the increment in GOP of the firms. This

indicates an efficient use of short-term assets and liabilities of a company to generate profit and allows investors to estimate the company's overall health. However, in financial management, manager's goal is to reduce the CCC because longer cycle of cash will lead to greater need for short-term financing to pay for the firm's materials needs and vice-versa, but shorter cycle will minimize the firm costs. Similarly, Ali (2011) documented a positive relationship of CCC with firm performance for 160 Nigerian textile firms in Pakistan for the period of five years from 2000 to 2005.

Saghir *et al.* (2011) revealed a significant adverse relationship of CCC with firm profitability represented by ROA of 60 textile firms on the Karachi stock exchange for a duration of 5 years starting from 2001 to 2006. Similarly, Garcia and Martinez (2007) recorded that CCC and ROA have a significant negative relationship among the small and medium sized Spanish firms. The study applied regression analysis which gathered 8872 SMEs from the year 1996 to 2002. Moreover, Gul *et al.* (2013) presents a negative significant relationship for CCC and firm profitability measured by ROA on Pakistani small medium enterprises (SMEs) from 2006 to 2012. Numerous studies have utilized ROA to assess the profitability of firm to test the influence of CCC on profit performance of companies (Ali 2011; Saghir *et al.*, 2011; Sharma and Kumar 2011; Gul *et al.* 2013; Bulin *et al.*, 2016; Sin *et al.*, 2017)

Based on the results described above, it appears that the findings regarding working capital management as well as the performance of a firm from previous studies are

varied. The findings could be influenced by different size of sample, period of study, methodology and variables used.

2.3.1.2 Inventory Conversion Period (ICP)

The number of day's inventory or inventory conversion period is the time lag for purchasing materials, manufacturing and selling the finished goods (Hillier *et al.*, 2010).

Mathuva (2010) described ICP as the period taken to change inventory into sales. An increment in the ICP will increase the inventory cost. Hence, the objective of inventory management is to lessen the cost of inventory without initiating distraction in the production (Bhattacharya, 2003). To improve working capital and efficiency, management needs to have a balance between inventory for sales and less inventory as well. When there is less inventory to meet customers demand instantly, the company will lose earnings if customer demand is not fulfilled (Padachi, 2006).

Misbah *et al*. (2015) investigated Malaysian listed companies for the duration of 10 years starting from year 2002 to 2011. The finding of the study revealed that the ICP have a significant negative relationship with the profitability of the firms. Mansoori and Muhammad (2012) measured profitability of 92 Singaporean listed companies using ROA covering a period of eight years from 2004 to 2011. The findings indicated a significant negative relationship between ICP and profitability on the selected companies. Moreover, Gul *et al*. (2013) examined the small medium enterprises

(SMEs) in Pakistan and discovered that ICP and ROA have significant negative relationship. In fact, Deloof (2003) discovered similar negative relationship on Belgian non-financial firms with a sample of 1009 firms from 1992 to 1996.

However, Uremadu *et al.* (2012) found a contrasting result whereby it was observed that a positive relationship exists between ICP and ROA in the Nigerian quoted production industry with a sample of 25 companies from 2005 to 2006. Furthermore, Soekhoe (2012) studied 70 Dutch listed companies and found a similar positive relationship for four years from 2006 to 2010, but the researcher found an insignificant relationship of ICP with ROA using a fixed effects model. Moreover, Sharma and Kumar (2011) recorded a significant positive relationship between ICP and firm profitability on a sample of 263 Indian firms within nine years from 2000 to 2008. Similarly, Mathuva (2010) found a significant positive relationship between ICP and profitability of firm on 30 samples of Kenyan companies from 1993 to 2008.

Nevertheless, Albdwy *et al.* (2014) revealed a significant negative relationship result on Shariah compliance and non Shariah compliance listed companies in Malaysia covering duration of five years from 2009 to 2013. A significant inverse relationship also reported for ICP and ROA by Saghir *et al.* (2011). The data were collected for textile firms from Karachi stock exchange with a sample of 60 firms from 2001 to 2006. Likewise, Garcia and Martinez (2007) reported a negative relationship between the ICP and profitability measured by ROA from a panel of 8872 SMEs in Spain.

Quayyum (2011) used ROA together with net profit margin (NPM) to represent profitability of firm towards cement listed companies in Bangladesh for five years. The finding showed a significant inverse relationship between profitability and ICP. Similarly, Ching *et al.* (2011) employed return on sales (ROS), return on assets (ROA), and return on equity (ROE) on companies in Brazil for the period of five years from 2005 to 2009. They recorded a significant inverse relationship between ICP and ROA and ROS with no statistical relationship on ROE. These findings are consistent with those reported by Dong and Su (2010) who studied 130 Vietnam listed companies over the period of three years from 2006 to 2008. The study used GOP to measure profitability and documented a negative relationship between ICP and firm profitability. Lastly, Akinlo and Olufisayo (2011), Ali (2011) and Abuzayed (2012) documented a positive relationship between ICP and profitability of companies, which are contradicted with results from many previous studies.

2.3.1.3 Receivable Collection Period (RCP)

Receivable conversion period (RCP) is defined as the period between the credit sale of a product and cash receipts. In addition, the RCP is the average time it takes by customers to settle their accounts (Van Horne and Wachowicz, 2009).

Firms manage the receivables so that the credit period and its due date are well known by the customer (Padachi, 2006). The company's accountant or credit collector usually performs credit analysis to assess who pays on time and who are not so that the management can take necessary action. If a company receives the cash early, it may

improve the working capital and efficiency of the company. Nevertheless, if a company insists very much in collecting cash too early from the customers, it may hamper the relationships between the parties and negatively impact the sales of the company's business in the long run as customer may turn to the company's competitors.

Wasiuzzaman (2015) analysed the relationship between RCP and firm profitability. The result showed a significant adverse relationship of RCP and ROA as one of the proxies of profitability on Malaysian manufacturing firms with a sample of 160 firms from 2005 to 2010. The results are in agreement with Deloof (2003) who also found similar relationship on 1009 Belgian non-financial firms from 1992 to 1996. In addition, Lazaridis and Tryfonidis (2006) reported a substantial negative relationship between RCP and profitability of 131 firms from the Athens Stock Exchange from 2001 to 2004, analyzed using GOP in measuring firm profitability.

However, Abuzayed (2012) examined the listed companies from Amman Stock Exchange from 2000 to 2008. The study used 52 companies as a sample of the study and found a positive relationship between RCP and firm profitability using GOP as profitability measurements. Similarly, Falope and Ajilore (2009) found a substantial positive relationship between RCP and firm profitability using the general moment method on selected Nigerian non-financial companies within the duration of ten years from 1996 to 2005.In contrary, Sin *et al.* (2017) investigated 122 Malaysian listed manufacturing firms from 2007 to 2012. They documented a significant negative

relationship for RCP and ROA as profitability indicator. Misbah *et al.* (2015) also achieved similar significant negative relationship in Malaysian listed companies with a sample of 189 companies from 2002 to 2011. Furthermore, Ademola (2014) recorded similar significant adverse relationships of RCP and firm profitability on Nigerian listed firms with a sample of 120 firms from 2002 to 2011.

Akinlo & Olufisayo (2011) established a contrary result on Nigerian listed companies based on a sample of 66 firms from 1999 to 2007 and documented a positive significant relationship between RCP and profitability. Moreover, Sharma and Kumar (2011) reported a positive and substantial relationship between RCP and profitability from the Indian listed companies examined. The study employed non-financial firms of 263 within nine years from 2000 to 2008.

Ali (2011) studied Nigerian textile firms in Pakistan for the period of six years from 2000 to 2005 from 160 companies using ROA as a measure of profitability. The study found a significant inverse relationship between RCP and profitability of a firm. Furthermore, Gul *et al.* (2013) recorded a similar negative relationship on small medium enterprises (SMEs) in Pakistan for a seven year period from 2006 to 2012 using ROA to represent firm profitability.

Likewise, Mansoori and Muhammad (2012) utilized ROA as one of the proxies of profitability on 92 listed companies in Singapore for the period of eight years starting from 2004 to 2011. Their study documented a similar inverse relationship between

RCP and profitability. Similarly, Ray (2012) found a significant and negative relationship between RCP and net operating profit (NOP). The study employed 311 Indian firms as sample of study for 14 years which started from 1997 to 2010.

On the other hand, Nimalathasan (2010) found a lower degree of relationship between RCP and firm profitability. The author used ROA to represent the profitability for 31 listed companies in Sri Lanka for the duration of five years from 2003 to 2007. Nevertheless, Gill *et al.* (2010) documented a significant relationship between RCP and profitability on a sample of American companies.

Thus, several studies present significant negative relationship of RCP with firm profitability with only few recorded positive relationship. This means that if the company takes less time to turn its sales (credits) into cash, the more profitable it will become.

2.3.1.4 Payable Collection Period (PCP)

Accounts payable is a file or sub-ledger account which records the unpaid amount to suppliers that a person or company owes, which is a form of debt occasionally referred as payable collection period (PCP) (Huang *et al.*, 2009). PCP represents the average amount of time in which the business holds its accounts payable (Huang *et al.*, 2009). It calculates the average amount of time in which the company uses each dollar of credit available. Singh (2004) stated that the liquidity of positionary firm mostly

depends on accounts receivable and payable deferred policy as well as inventories conversion period of firm.

Unlike inventory, accounts receivable and cash management demonstrate the current assets of the WCM; however, account payable signifies the current liabilities of working capital management. PCP indicates the number of days taken by the company to make payment to their suppliers. If the PCP increases, it may cause the company to lose its suppliers. Thus, companies should retain good relationship with their suppliers at the time by keeping optimal working capital management.

Deloof (2003) examined the Belgian non-financial firms within five years starting from 1992 to 1996 for a sample of 1009 companies. The study showed an inverse relationship between PCP as a measure of time taken to pay creditors and ROA that represents firm profitability. Saghir *et al.* (2011) studied 60 textile firms from Karachi stock exchange from 2001 to 2006 and exhibited the same result. In addition, Uremadu *et al.* (2012) also reported a similar inverse relationship between PCP and profitability from Nigerian quoted production industry for the duration of two years from 2005 to 2006. Similarly, Misbah *et al.* (2015) discovered significant negative relationship on Malaysian listed companies with a sample of 189 companies from 2002 to 2011.

However, Sin *et al.* (2017) observed an opposite insignificant relationship between PCP and ROA to indicate profitability. They employed 122 Malaysian listed

manufacturing firms from 2007 to 2012 using similar analysis tools. Besides, Yunos *et al.* (2015) recorded a lower degree of relationship of PCP on firm profitability also indicated by ROA towards 58 Malaysian listed government linked companies (GLCs) for the period of ten years from 2003 to 2014. Ademola (2014) also reported an insignificant relationship between profitability and PCP outstanding for Nigerian listed companies as sample of the study.

Furthermore, a study by Gill *et al.* (2010) revealed an insignificant relationship between profitability and PCP for American listed companies using the same tools of data analysis. The study used GOP as a measure of profitability for 272 firms within five years of 2005 to 2007. Likewise, Anojan *et al.* (2013) examined the relationship between PCP and profitability and found an insignificant relationship of the number of PCP with the ROA as a measure of profitability on Beverage, Food and Tobacco listed companies in Sri Lanka. The researcher used 9 companies within the duration of eleven years starting from 2008 to 2012.

In another research reported by Lazaridis and Tryfonidis (2006), they documented a significant positive relationship for profitability which was measured through GOP and PCP on 131 listed companies in Athens. According to Mansoori and Muhammad (2012), ROA, representing profitability, was significantly and positively related with PCP from 92 Singaporean listed companies for the period of eight years of 2004 to 2011. Albdwy *et al.* (2014) also revealed similar significant positive relationship of Shariah compliance and non Shariah compliance companies registered in Bursa

Malaysia with a sample of 90 companies for both types of companies from 2009 to 2013.

As discussed above, various results obtained which associated with the relationship of working capital management with profitability. Differentiation of samples, methodology and also the variables used may be the reason to the differences of findings from previous researchers.

2.4 Control Variables

2.4.1 Firm Size (SIZE)

In determining the relationship for the independent and dependent variables, the presence of control variables needs to be taken into account. SIZE indicates the natural logarithm of total asset as well as firm performance. It is normally found to have positive relationship with firm profitability as it reflects that greater SIZE will generate greater profitability for firm. This suggests that larger firms can manage their cash cycles better so as to show greater profitability.

In a research conducted by Ozgulbas *et al.* (2006), they shared about the impacts of SIZE on the firm performance which operated in Istanbul Stock Exchange within the years from 2000 to 2005. From their study, it is found that large scale firms have higher performance than that of small scale firms. This is also in line with Yunos *et al.* (2015) who stated the same relationship between profitability and SIZE of the government-linked companies where larger firms have higher profitability compared to smaller firms.

However, Deloof (2003) revealed negative relationship of SIZE with working capital investment. In other research conducted by Sharma and Kumar (2011), they examined all four independent variables separately. SIZE was used as one of the control variables in their regression analysis. The result of all independent variables showed that SIZE has negative significant relationship with firm profitability. The study was conducted in Indian market and reflected that in Indian market, larger SIZE of firm did not increase firm profitability.

In a study towards Sri Lanka manufacturing firm, a contradict result was found. Niresh and Velnampy (2014) investigated the effect of SIZE on profitability using ROA and net profit as indicators, whereas total assets and total sales have been utilized as indicators of SIZE. The empirical result suggested that there was no indicative relationship between profitability and SIZE.

2.4.2 Leverage (DR)

In this study, leverage has been considered as a control variable. Leverage is determined as total debt over total asset known as debt ratio (DR). Sin *et al*. (2017) carried out a research for seeking the impact of working capital management toward firm profitability in the Malaysian public listed manufacturing firms. They found that the DR and firm profitability have negative significant association.

A study conducted by Salim and Yadav (2012) towards 237 Malaysian listed companies sought the relationship between leverage and growth as independent

variables, while the firm performance was considered as dependent variables measured by return on asset (ROA), return on equity (ROE) and earning per share (EPS) for the year 1995 to 2011. The results exhibited that there was negative relationship between leverage and firm performance. This indicates that increased in firm leverage can lead to decrease in firm performance.

However, in a study conducted by Gill *et al*. (2011), the relationship between capital structure and profitability of the American service and manufacturing firms which were listed in New York Stock Exchange via the regression analysis demonstrated a positive relationship between leverage and profitability.

In other research conducted by Raza (2013), insignificance relationship on financial leverage and profitability was observed for the firm performance of non-financial firms listed in Karachi Stock Exchange from 2004 to 2009.

2.4.3 Sales Growth (SG)

Growth and profitability are a concern for an organization, but general relationships are not existed between them. Many researches have been executed to seek that relationship, but no correlative agreement among all the researchers. Various results have been shown by previous studies of which some are given here. SG has a negative relationship with firm profitability as mentioned by Sharma and Kumar (2011). While, Deloof (2003) found that SG reported a positive relationship with firm profitability of Belgian firms when tested with all four independent variables, namely

PCP, RCP, ICP and CCC. Likewise, Yunos *et al*. (2015) discovered a positive relationship of SG with firm profitability for 58 Malaysian listed government-linked companies (GLC) covering the period from 2003 to 2014.

Jang and Park (2011) analyzed the relationship for firm profitability and growth. They postulated that increment in profit will also increase growth, but the profitability is hindered if the growth increases. Cowling (2004) employed increase in sales as the predictive of growth and discovered that profit and SG have positive correlation.

Bottazzi *et al*. (2001) utilized productivity to measure profit rate and claimed that profit was not related to growth. This is supported by Markman and Gartner (2002), who stated that no relationship was obtained between growth and profitability.

Reid (1995) revealed that profitability was negatively influenced by growth. Greiner (1972) stated that the relationship of profitability with growth of the company could be either positive or negative.

2.5 Related studies about Bumiputera-controlled companies (BCCs)

This section reviews literatures on the BCCs. The earlier study on the BCCs was conducted by Aminudin (2000). This study looked into the corporate performance and ownership structure of BCCs and non-BCCs. The study analyzed the Malaysian companies listed on the KLSE from 1993 up the first quarter of 1997 which was

before economic downturn. The results showed that ownership structure have no impact on the performance of companies' accounting profit. In other words, performance of the BCCs and non-BCCs were equally competitive. The BCCs have managed to remain competitive as they had been receiving various kinds of privileges and various support from the government. The non-BCCs especially Chinese communities, on the other hand, are known for their productivity and excellent entrepreneurial skills. Therefore, there is no indication that ethnic ownership would determine the performance of companies, as each ethnic had their distinguished motivating factors to boost up the performance.

A study of governance structures and audit fees among BCCs has been conducted by Yatim *et al*. (2006). They looked into the performance BCCs in the year of 1986 to 2001 in paying higher audit fees due to the weaker governance practices. However, the authors concluded that the findings were contradicted. The activities of BCCs has enhanced internal corporate governance practices rather than the non-BCCs. This outcome proves that lower external audit fees are paid by the BCCs since their internal governance structures are relatively stronger than the non-BCCs.

The effect of regulated initial public offering (IPO) by the government intends to promote public policy mandating any new shares by at least 30 percent for IPO offer to be sold to indigenous Bumiputera residents or to correlative funds owned by them (Dev *et al*., 2006). In fact, Dev *et al.* (2006) explored the IPO prices of Malaysia in the short run and long run and found that Malaysia's IPO prices are cheaper compared

to IPO in the developing countries, which create a microstructure effect of market. It also verified that the regulatory intervention of Malaysian government despite the righteous intention of public policy has been perceived as a significant factor for the transpire of Malaysia's IPO at low prices on the first day with an average of 61 percent when the period after the regulatory economic policy began.

A previous research on the performance of BCCs was further continued by Marimuthu (2010) by looking into the impacts of crisis and post-crisis periods which were considered from 1996 to 2005. In this study, the researcher used 33 BCCs which were listed on the Bursa Malaysia. The results indicated that BCCs experienced difficulties for both short-term and long-term due to the financial crisis. Moreover, Halim *et al*. (2014) investigated the financial performance and management issues of Bumiputera construction firms. Analysis of data collected involved the use of qualitative (ratio analysis) and quantitative (questionnaire) research methods. Respondents to the qualitative study consisted of 6 Bumiputera construction firms, while quantitative data had 54 respondents (Bumiputera contractors). Their findings indicated that the level of capital liquidity of the contractors on average was lower than the industry average, received small profit from construction projects, burdened with higher debt and were less efficient in managing their financial resources or assets.

Table 2.1

Overview of previous studies on the relationship between working capital management and profitability.

Variables	Country	Literature	Findings
Cash Conversion Cycle (CCC)	Developing country	Sin *et al.* (2017) : Malaysian listed manufacturing companies from 2007 - 2012	significant positive
	Developed country	Lazaridis and Tryfonidis (2006) : companies which were listed in the Athens Stock Exchange from 2001 - 2004	significant negative
Inventory Conversion Period (ICP)	Developing country	Albdwy *et al.* (2014) : Malaysian Shariah compliance and non Shariah compliance listed companies from 2009 - 2013	significant negative
	Developed country	Deloof (2003) : Belgian non-financial firms from 1992 - 1996	significant negative
Receivable Collection Period (RCP)	Developing country	Wasiuzzaman (2015) : Malaysian manufacturing firms from 1999 - 2008	significant negative
	Developed country	Mansoori and Muhammad (2012) : 92 listed companies in Singapore from 2004 - 2011	significant negative
Payable Collection Period (PCP)	Developing country	Saghir *et al.* (2011) : 60 textile firms from Karachi stock exchange from 2001 - 2006	significant negative
	Developed country	Deloof (2003) : Belgian non-financial firms from 1992 - 1996	significant negative
Size of the firm (Size)	Developing country	Yunos *et al.* (2015): government-linked companies listed in Bursa Malaysia from 2003 - 2014	significant positive
	Developed country	Deloof (2003) - 1009 Belgian non-financial firms from 1992 - 1996	significant negative
Debt Ratio (DR)	Developing country	Sin *et al.* (2017) : Malaysian listed manufacturing companies from 2007 - 2012	significant negative
	Developed country	Gill *et al.* (2011) : American service and manufacturing firms which were listed in New York Stock Exchange from 2005 - 2007	significant positive

Sales Growth (SG)	Developing country	Sharma and Kumar (2011) : 263 non-financial BSE 500 firms listed at the Bombay Stock (BSE) from 2000 to 2008	significant negative
	Developed country	Deloof (2003) : 1009 Belgian non-financial firms from 1992 - 1996	significant positive

Table 2.2

Overview of previous studies on the Bumiputera-controlled companies in Malaysia

Authors	**Focus of Study**	**Findings**
Aminudin (2000)	This study looked into the corporate performance and ownership structure of Bumiputera and non-Bumiputera controlled companies.	Performance of Bumiputera and non-Bumiputera controleld companies were equally competitive.
Dev *et al.* (2006)	Explored the IPO prices of Malaysia in the short run and long run.	Malaysia's IPO prices are cheaper compared to IPO in the developing countries.
Yatim *et al.* (2006)	The study looked into the performance of Bumiputera-controlled companies in the year 1986 to 2001 in paying higher audit fees due to the weaker governance practices.	Lower external audit fees are paid by the Bumiputera-controlled firms since their internal governance structures are relatively stronger than the non-Bumiputera firms.
Marimuthu (2010)	Looking into the impacts of crisis and post-crisis periods which were considered from 1996 to 2005 of 33 Bumiputera-controlled companies which were listed on Bursa Malaysia	Bumiputera-controlled companies experienced difficulties for both short-term and long-term due to the financial crisis.
Halim *et al.* (2014)	Investigated the financial performance and management issues of Bumiputera construction firms.	The level of capital liquidity of the contractors on average was lower than the industry average, received small profits from construction projects, burdened with higher debt and were less efficient in managing their financial resources or assets.

2.6 Summary of the chapter

Chapter two provides the literature review on dependent variable, independent variables and control variables. Dependent variable used is firm profitability which represented by ROA, while independent variables of working capital represented by CCC, ICP, RCP and PCP. The control variables used in the study are firm size, debt ratio and sales growth.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

In this chapter, a development of a theoretical framework was conducted for the purpose of answering the research questions and investigating the objectives presented in Chapter 1. This chapter is presented in sections which include research framework, hypotheses development, research design, and operational definition, measurement of variables, sampling, data collection procedures and techniques of data analysis.

3.1 Research Framework

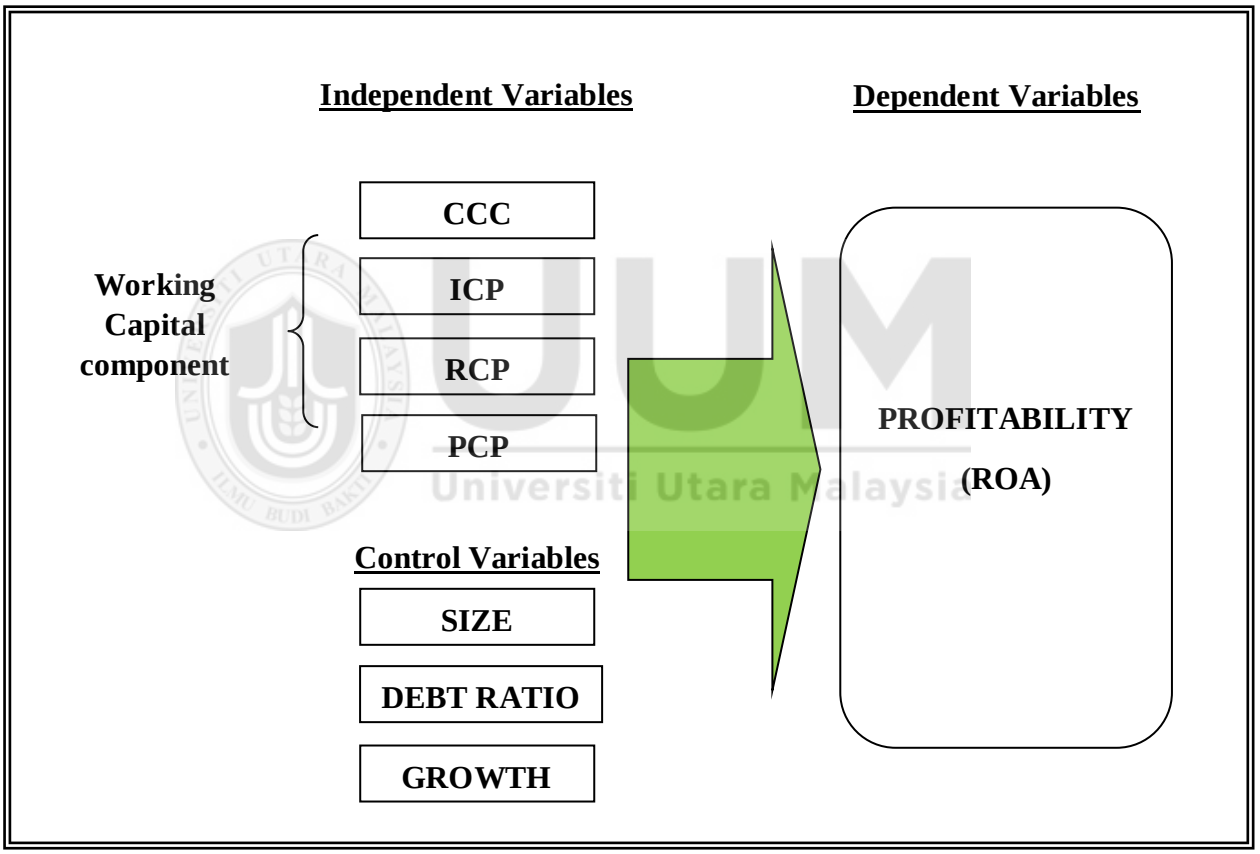
This study analyses the effect of WCM toward the profitability of BCCs between 2006 and 2015. In order to conduct this analysis, 94 samples of BCCs listed on Kuala Lumpur Stock Exchange was employed.

In the present study, the ROA of BCCs represented the dependent variable. The argument for the adoption of ROA as dependent variable is because return on asset is also used to measure the efficiency of the firm to maximize profits by the exploitation of its assets (Riyanto, 2001). ROA also has the advantage of indicating the extent to which a company turns its assets in earning income (Subramanyam, 2014). Thus, it measures the level of asset utilization in income cowgeneration.

The CCC (proxy of working capital) and the components of working capital, namely ICP, RCP and PCP, represented the independent variables. The control variables were debt ratio, firm size and sales growth.

Figure 3.1

Research Framework



3.2 Hypotheses/Propositions Development

The Hypothesis 1 (H1):

H_0: There is a significant negative relationship between cash conversion and profitability.

$H1 = H_0$

$H1 \neq H_0$

H_a: There is a significant positive relationship between cash conversion cycle and profitability.

$H1 = H_a$

$H1 \neq H_a$

Hypothesis 1 is developed to study the relationship between cash conversion cycle (CCC) with profitability of Bumiputera-controlled companies. Previous researchers contend that there is a significant negative association between CCC and profitability. This is supported by Deloof (2003), Lazaridis and Tryfonidis (2006), Garcia and Martinez (2007), Dong and Su (2010), Saghir *et al.* (2011), and Gul *et al.* (2013). The negative relationship between CCC and profitability explains that longer CCC will decrease firm profitability. In other words, shorter CCC typically promotes greater profitability for a firm.

However, there are also several studies that demonstrate a significant positive relationship between CCC and profitability, including Gill *et al*. (2010), Akinlo and Olufisayo (2011), Ali (2011), Sharma and Kumar (2011), Ademola (2014), Bulin *et al.* (2016), and Sin *et. al.* (2017). The positive relationship between CCC and

profitability explains that longer CCC will increase firm profitability. In other words, longer CCC should promote greater profitability for firm.

The Hypothesis 2 (H2):

H_0: There is a significant negative relationship between inventory conversion period and profitability.

$H2 = H_0$

$H2 \neq H_0$

H_a: There is a significant positive relationship between inventory conversion period and profitability.

$H2 = H_a$

$H2 \neq H_a$

Hypothesis 2 is developed to study the relationship between inventory conversion period (ICP) with profitability of Bumiputera-controlled companies. Previous studies by Deloof (2003), Garcia and Martinez (2007), Dong and Su (2010), Ching *et al.* (2011), Quayyum (2011), Saghir *et al.* (2011), and Mansoori and Muhammad (2012) suggest that ICP have a negative relationship with profitability. It indicates that the ICP held will negatively affect a firm's profitability. In contrast, Mathuva (2010), Kumar (2011), Soekhoe (2012), Uremadu *et al.* (2012), Gill et al. (2010), Akinlo and Olufisayo (2011), Ali (2011), and Abuzayed (2012) demonstrate a positive relationship between ICP and profitability of companies, indicating that the ICP held will positively affect a firm's profitability.

The Hypothesis 3 (H3):

H_0: There is a significant negative relationship between receivable collection period and profitability.

$H3 = H_0$

$H3 \neq H_0$

H_a: There is a significant positive relationship between receivable collection period and profitability.

$H3 = H_a$

$H3 \neq H_a$

Hypothesis 3 is developed to study the relationship between receivable collection period (RCP) with profitability of Bumiputera-controlled companies. Previous studies by Deloof (2003), Lazaridis and Tryfonidis (2006), Ali (2011), Mansoori and Muhammad (2012), Ray (2012), Gul *et al.* (2013), Ademola (2014), Wasiuzzaman (2015), and Sin *et al.* (2017) suggest that RCP have a significant negative relationship with profitability. It implies that any increase in RCP will decrease a firm's profitability.

In contrast, Falope and Ajilore (2009), Akinlo and Olufisayo (2011), Sharma and Kumar (2011), and Abuzayed (2012) indicate a significant positive relationship between RCP and profitability. It implies that any increase in RCP will increase a firm's profitability.

The Hypothesis 4 (H4):

H_0: There is a significant negative relationship between working capital management where the payable collection period and profitability.

$H4 = H_0$

$H4 \neq H_0$

H_a: There is a significant positive relationship between working capital management where the payable collection period and profitability.

$H3 = H_a$

$H3 \neq H_a$

Hypothesis 4 is developed to study the impact of payable collection period to the profitability of Bumiputera-controlled companies. Previous studies by Deloof (2003), Saghir *et al.* (2011), and Uremadu *et al.* (2012) suggest that PCP have a significant negative relationship with profitability. It indicates that increase in PCP will reduce a firm's profitability.

In researches by Lazaridis and Tryfonidis (2006), and Mansoori and Muhammad (2012), the findings indicate a significant positive relationship between PCP and profitability. It suggests that an increase in PCP will also increase a firm's profitability.

3.3 Research Design

A list of 94 Bumiputera-controlled companies was obtained from the book of "*Ikon Bumiputera PLC 2014-2015*". Data of each company were collected from DataStream of UKM's library. Analysis on the relationship for WCM and firm profitability was carried out using descriptive statistics, Pearson's correlation and regression analysis.

3.3.1 Dependent Variable

In the present study, the dependent variable was return on asset (ROA) as one of the proxies for firm's profitability. ROA was also employed as an dependent variable by Garcia and Martinez (2007); Mansoori and Muhammad (2012); Anojan *et al*. (2013); Gul *et al.* (2013); Yunos *et al.* (2015); Wasiuzzaman (2015); Bulin *et al.* (2016) and Sin *et al*. (2017).

The ROA measures the firm's net income as a percentage of total asset. The business goal of a company can only be achieved through good management of its operating, financing and investing activities (Needles *et al.*, 2008). High ROA indicates that the firm is efficient in using its asset to generate high income.

3.3.2 Independent Variables

Cash conversion cycle (CCC) is the most frequently employed to measure the working capital management (Deloof, 2003 and Zariyawati *et al.*, 2009). Many previous studies have shown that CCC had given significant results (Deloof, 2003;

Gill *et al*., 2010; Sharma and Kumar, 2011; Ali, 2011; Ademola, 2014; Bulin *et al*., 2016 and Sin *et al.*, 2017).

CCC means the period between the payment for materials and sales collection of a firm, reducing the day's credit given by the creditors. The CCC of firm' shows how quickly a firm can turn its inventory into sales to collect cash while using the day's credit purchases. The CCC has three components which are inventory conversion period (ICP), receivable collection period (RCP) and payable collection period (PCP). The CCC can be either positive or negative. To have a short CCC, the firms have to cut the RCP, reduce the ICP and decrease the PCP.

3.3.3 Control Variables

The control variables are the variables that could influence the relationship, but not the area of interest to be studied by the researcher. Based on previous studies, the incorporated control variables on working capital management are firm size (Deloof, 2003; Sharma and Kumar, 2011; Yunos *et al*., 2015), sales growth (Bottazzi *et al*., 2001; Deloof, 2003; Cowling, 2004; Jang and Park, 2011), and debt ratio (Salim and Yadav, 2012; Gill *et al.*, 2011; Sin *et al.* 2017).

Similar to previous studies, this study also used leverage, size of the firm and sales growth as control variables. Table 3.1 provides the list of all dependent and independent variables.

Table 3.1

Measurement of Variables and Definitions

Variable	Definition	Measurement
Return on Asset	This is a measure of firm's profitability. It gauges how efficiently a firm uses its assets to produce income.	ROA = Net sales (operating profit)/Total assets (Deloof, 2003; Albdwy *et al*., 2014)
Inventory Conversion Period	This is the time (in days) taken required to convert inventory held in of the firm into sales	ICP = (Inventory/Cost of Sales) *365. (Gul *et al*., 2013; Albdwy *et al*., 2014).
Receivable Collection Period	The time spent (in days) for the collection of cash from customers	RCP = (Trade Receivables/Net Sales) *365. (Gul *et al*., 2013; and Albdwy *et al*., 2014).
Payable Collection Period	This refers to the time spent (in days) to pay to the suppliers of the firm	PCP = (Trade Payables/Cost of sales) *365. (Gul *et al*., 2013; and Albdwy *et al*., 2014).
Cash Conversion Cycle	This is the period (in days) between the firm's payment for materials and collection on its sales	CCC = ICP + RCP - PCP

Firm Size	The data for total assets is in the asset classification of a firm's balance sheet assets	Logarithm of its total assets (Deloof, 2003; Wasiuzzaman and Arumugam, 2013; Gul *et al.*, 2013)
Sales Growth	The variation in its annual sales value with reference to sales of previous year	[(Sales t - Sales t-1)/Sales t-1] (Deloof, 2003; Nobanee and Alhajjar, 2009; Wasiuzzaman and Arumugam, 2013; Gul *et al*., 2013)
Debt ratio	This is the degree to which a firm is utilizing borrowed money	Total debt/total asset (Gul *et al*., 2013; Wasiuzzaman and Arumugam, 2013).

3.4 Data Collection

3.4.1 Sampling

To be in line with previous studies, companies from certain industries were excluded from the focus of this study. The exclusion of these companies is due to the nature of the business that unable to fulfill the purpose of the study (Gill *et al.*, 2010). Due to the differences in accounting characteristics, industries such as banking, financial and insurance firms have been taken out from the list of sample to prevent problem in data harmonization with other industry firms (Duellman, 2006).

The sample in this study comprised 94 out of 132 Bumiputera-controlled companies listed in the Bursa Malaysia which were obtained from the book of "*Ikon Bumiputera PLC 2014-2015*". It should also be emphasized here that all the BCCs listed or to be listed after December 2006 were excluded because the study only covered financial years ranged from 2006 to 2015. Table 3.2 shows the breakdown of 94 BCCs listed in Bursa Malaysia, which was grouped according to sectors:

Table 3.2

The breakdown of Bumiputera-controlled companies grouped in sectors

Sector	**Number**	**Percentage**
Infrastructure & Utilities	3	3%
Trading & Services	37	40%
Construction	9	10%
Plantation	5	5%
Property	14	15%
Technology	7	7%
Industrial Products	15	16%
Consumer Products	4	4%
Total	94	100%

3.4.2 Data Collection Procedures

The initial sample of this study are 132 BCCs in Malaysia. However, only data of 94 BCCs in Malaysia were able to be collected between the periods of 2006 until 2015 from the Data Stream. The reason for excluding the remaining 38 companies was due to incomplete data obtained from these companies which became the limitation of this study. This study also excluded companies which their merger and acquisition were established after 2006. To fulfill the objectives of this study, the data contained all the variables measured including ROA, CCC, ICP, RCP, PCP, sales growth, leverage (debt ratio), and firm size.

Therefore, these criteria were used to select the sample in Bumiputera-controlled companies as follows:

1) Listed in Bursa Malaysia
2) Bumiputera-controlled companies
3) All data must be available for year 2006 to 2015.

3.4.3 Model Specification

The model specification of this study was adapted from Gul *et al*. (2013), and Charitou *et al*. (2010) and developed as follows:

$$ROAit = \beta 0 + CCCit + ICPit + RCPit + PCPit + SIZEit + SGit + DRit + eit$$

Where:

ROA: Return on asset or every firm

CCC: Cash Conversion Cycle

ICP: Inventory conversion period or every firm

RCP: Receivable collection period

PCP: Payable collection period

SIZE: Size of the firm which is represented by the natural logarithm of total assets

SG: Sales growth

DR: Debt ratio

β0: The intercept of the equation

e: Error term

i: Represents the firm

t: Represents the year (2006 - 2015)

3.5 Operational Definition

Return on assets (ROA). This is a measure of a firm's profitability. It gauges the effective use of the assets in producing income, and is derived from the following formula:

ROA = Net sales / Total assets (Needles *et al.*, 2008).

Working capital (WC). It represents the difference of current assets and current liabilities of a firm in an operating period. The formula used for working capital is:

WC = Current assets – Current liabilities. (Gul *et al*., 2013, and Charitou *et al*., 2010).

Working capital management (WCM). This is the management strategy employed by a firm to maintain the desired level of efficiency of working capital, current assets and current liabilities, relative to one another.

Cash conversion cycle (CCC). This is the period (in days) between the firm's payment for materials and collection of its sales. This is derived from the following formula:

CCC = ICP + RCP + PCP.

Inventory conversion period (ICP). This is the time (in days) taken to convert inventory held by a firm into sales. This is derived from the following formula:

ICP = (Inventory / Cost of Sale) x 365 days. (Gul *et al*., 2013; Charitou *et al*., 2010).

Receivable Collection Period (RCP). This is the time spent (in days) for the collection of cash from customers. This is derived from the following formula:

RCP = (Trade Receivables / Net Sales) x 365 days. (Gul *et al*., 2013; Charitou *et al*., 2010).

Payable Collection Period (PCP). This refers to the time taken (in days) to pay to the suppliers of a firm. This is derived from the following formula:

PCP = (Trade Payables / Cost of Sales) x 365 days. (Gul *et al*., 2013; Charitou *et al*., 2010).

Firm size (SIZE). The data for total assets are in the asset classification of a firm's balance sheet. This is evaluated from the logarithm of its total assets. This is derived from the following formula:

SIZE = Logarithm of its total assets (Deloof, 2003; Wasiuzzaman and Arumugam, 2013; Gul *et al*., 2013)

Firm growth (GROWTH). The change in a firm's annual sales value by reference to sales of previous year is represented by:

[(Sales t – Sales t – 1) / (Sales t – 1)] (Deloof, 2003; Wasiuzzaman and Arumugam, 2013; Gul *et al*., 2013; Nobanee and Alhajjar, 2009).

Financial leverage (debt ratio). This is the degree to which a firm is utilising borrowed money. This is derived from the following formula:

Debt Ratio = Total Debt / Total Asset (Gul *et al.*, 2013; Wasiuzzaman and Arumugam, 2013).

3.6 Data Analysis Techniques

This study has employed the Ordinary Least Square (OLS) method to observe the relationship between WCM (the proxies are RCP, PCP, ICP and CCC) and profitability (the proxy is ROA). Control variables are firm size, sales growth, and debt ratio. The analysis utilized are descriptive statistics, correlation analysis, and regression analysis.

3.6.1 Descriptive Analysis

Descriptive analysis normally helps to obtain the summary details about the collected data. Descriptive analysis is a table of summary statistics, which includes the maximum and minimum value, the mean, the mode, and also the median. It measures the variability of variables, including the standard deviation. Descriptive statistics provide simple summaries about the sample studied.

3.6.2 Correlation Analysis

The correlation analysis is presented in correlation matrix table. It shows negative or positive correlation between the variables, indicating the positive or negative

relationship between the studied variables. Correlation is a relationship between two variables where both are moving in tandem. The value +1.00 indicates a perfect positive correlation between variables, while a 0.00 indicates no correlation, and a –1.00 indicates a perfect negative correlation. Positive correlation occurs when two variables moving in same direction. For example, when one variable decreases, the other variable also decreases, and vice versa.

3.6.3 Regression Analysis

Linear regression analysis is adopted in order to study the relationship between dependant variables and independent variables. In this study, linear regression is used to study the relationship between ROA and CCC, ROA and ICP, ROA and RCP, and ROA and PCP.

3.7 Summary of the chapter

Chapter 3 provides a discussion on the methodology used to perform this study. It also discusses the research frameworks that shows the dependent and independent variables to be studied in this paper. The hypothesis development is also explained to demonstrate how the hypothesis was developed, and to explain the relationship between dependent and independent variables tested. Further, it describes the research design, measurement of variables, data collection sampling and procedures, and operational definitions. Finally, this chapter discusses the data analysis techniques used to conduct this study.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter discusses the results of this study by determining the WCM, and its relationship with profitability of BCCs. The analysis, interpretation, and discussion include descriptive analysis, correlation analysis, autocorrelation and multicollinearity test, and regression analysis, and they examine the relationship of WCM components (ICP, RCP, PCP and CCC) with firm profitability. The study uses control variables of firm size, sales growth, and debt ratio. The conclusion for the chapter is provided at the end.

4.1 Descriptive Statistics

Table 4.1

Descriptive Statistics

	Minimum	Maximum	Mean	Median	Std. Deviation
ROA	-23.25	121.37	3.8177	2.2344	14.59062
CCC	-196.34	827.84	154.0740	104.8102	218.83603
ICP	.00	1542.20	156.0782	61.7344	277.48897
RCP	29.07	2525.57	217.2056	139.1880	309.09375
PCP	.44	2789.94	194.6169	85.4853	412.09326
SIZE	1.31	4.49	2.7111	2.7148	.63003
SG	-17.22	449.06	20.1994	8.0366	57.03667
DR	9.12	333.34	51.4968	45.9299	41.73552

Notes: This table shows the descriptive statistics for the working capital management measures and profitability of ninety-four (94) Bumiputera-controlled companies in Malaysia from 2006 to 2015. ROA is the Return of Asset, CCC is the Cash Conversion Cycle, ICP is the Inventory Conversion Period, RCP is Receivable Collection Period, PCP is Payable Collection Period, SIZE is the Total Assets of Firm, SG is Sales Growth, and DR is Debt Ratio.

Table 4.1 presents the descriptive statistics, including minimum, maximum, mean, and standard deviation values. The time period of the study is ten (10) years from 2006 to 2015, and the sample comprises ninety-four (94) firms. Profitability is measured using ROA. In this study, ROA has a mean value of 3.82, while profit is 3.82% of Total Assets. The recorded median is 2.23, with a standard deviation of 14.59. A high standard deviation (compared with a mean of 3.82) indicates a high dispersion of scores across the firms.

ROA of BCCs (3.82%) is smaller rather than ROA value that generated by other studies in Malaysia like Bulin *et al*. (2016). The smaller profit margin of BCCs is in

line with the study conducted by Halim *et al*. (2014), which reveals that BCCs enjoy a small profit margin from their business transactions.

The mean value of CCC is 154 days (median is 105 days), which means that the firms typically spends 154 days to get their cash. The higher CCC standard deviation of 218.84 indicates a wide variation in WCM among the BCCs. As the minimum value of CCC was –196.34, a negative value, it shows that the period of PCP is larger than the period of RCP and ICP, where the maximum value is 827.84 days.

The CCC of BCCs (154 days) is longer than CCC generated by other studies in Malaysia like Zariyawati *et al*. (2009) and Zariyawati *et al*. (2016). This longer period is consistent with the study conducted by Halim *et al*. (2014), which reveals that, on average, the capital liquidity in BCCs is lower than industry average. This shows that the firms are likely to have constantly faced a shortage of cash capital to finance their business, less efficient in managing their asset, and are generally mired in poor financial management.

The average number of days in which the firms convert inventory into a sale (ICP) is 156 days, while the median is 62 days, with a standard deviation of 277.49. The minimum time taken by the firm is 0[1] day, while maximum time is 1,542.2 days.

[1] Bumiputera-controlled companies used as a sample for this study are combination of companies from various sectors and not inclusive for manufacturing companies only.

However, ICP of BCCs (156 days) is longer than ICP generated by other studies in Malaysia conducted by Albdwy *et al*. (2014), and Misbah *et al*. (2015). This shows that BCCs are inefficient in managing their resources (inventory).

The average time spent to pay to the suppliers (PCP) of the firms is 194.6 days, while the median is 85 days, with a standard deviation of 412.09. The minimum payment period is 0.44 day, while the maximum period is 2,789.94 days. However, PCP of BCCs (195 days) is longer than PCP generated by other studies in Malaysia conducted by Albdwy *et al*. (2014), and Misbah *et al*. (2015). This indicates that BCCs are inefficient in terms of payment management.

For RCP, the average time spent for the collection of cash from customers is 217.2 days, median is 139 days, with a standard deviation of 309.09. Meanwhile, the minimum period for the collection is 29.07 days, and the maximum period is 2,525.57 days. RCP of BCCs (139 days) is shorter than RCP generated by other studies in Malaysia by Misbah *et al*. (2015). This indicates that BCCs perform well in receivable management.

For control variables, judging from total assets owned, SIZE reports a mean of 2.71 (RM514.16 million), with a median of 2.71 (RM518.56 million). Standard deviation is 0.63, indicating a lower variance in the size of firms. The smallest company only records 1.31 (RM20.42 million), and the largest company is 4.49 or RM30.90 billion. However, SIZE of BCCs (2.71) is smaller rather than SIZE value generated by other

studies in Malaysia like Wasiuzzaman and Arumugam (2013), and Yunos *et al.* (2015).

The average sales growth is 20.1994 (median of 8.04), while the highest standard deviation is 57.04, indicating a wide variation in sales growth in BCCs, with a minimum value of –17.22, and a maximum value of 449.06. Sales growth of BCCs (20.1994) is higher compared with sales growth rate generated by other studies in Malaysia like Wasiuzzaman and Arumugam (2013), Yunos *et al*. (2015), and Zariyawati *et al*. (2016).

The average of debt ratio is 51.5% of total assets financed by financial debt, the median is 45.9%, with a standard deviation of 41.74. The minimum value is 9.12%, while the maximum value is 333.34%. Debt ratio of BCCs (51.5%) is higher than the debt ratio generated by Zariyawati *et al*. (2016). Higher margin of BCCs leverage is consistent with the report of Asian Economic Review (2000), as well as other studies by Marimuthu (2010), and Halim *et al*. (2014), which discloses that Bumiputera companies are burdened by high debt level, since the bulk of their capital are obtained through bank loans.

4.2 Correlation Analysis

The correlations of all variables are presented in Table 4.2 to determine the correlation between the CCC and its components (ICP, RCP and PCP), and ROA.

Table 4.2

Correlation Matrix

	ROA	CCC	ICP	RCP	PCP	SIZE	SG	DR
ROA	1	-.078	-.053	.040	.276*	-.103	.027	.447*
CCC		1	.542*	.461*	-.321*	.169***	.090	-.267*
ICP			1	.545*	.414*	.062	.127	.296*
RCP				1	.304*	-.060	.391*	.307*
PCP					1	-.234**	.034	.769*
SIZE						1	-.059	-.129
SG							1	.000
DR								1

*. Significant correlation at 0.01 level (2-tailed).
**. Significant correlation at 0.05 level (2-tailed)
***. Significant correlation at 0.1 level (2-tailed)

The correlation between ROA with PCP was positive and the relationship was significant.It indicated that increased in PCP also increased the profitability of the firm. It also showed stronger relation between ROA with PCP rather than other WCM measures. The results of the correlations among control variables, debt ratio have significant relation to the profitability, indicating the relationship is stronger rather than other control variables measures. Leverage as measured by debt ratio has a positive correlation and significant relationship indicating that more leverage of the firm will give greater profitability to the firm.

4.3 Autocorrelation and Multicollinearity

In order to examine the hypotheses, regression analysis was performed to determine if there is significant relationship between WCM and profitability. Table 4.3 provides results for the model examined in this study. The presence of autocorrelation and multicollinearity in the data were checked with Durbin Watson (D-W) and Variance Inflation Factor (VIF) statistics for analysis of results.

Table 4.3

VIF test's results

Variables	**VIF**
CCC	3.758
ICP	3.225
RCP	2.301
PCP	4.433
SIZE	1.116
SG	1.269
DR	2.602

Gujarati (2003) revealed that multicollinearity emerges as a problem if the correlation coefficient is greater than 0.90. Table 4.2 presents the correlation results between CCC and its components, i.e., ICP, RCP and PCP were below than 0.90. The highest VIFs obtained were lower than the threshold value of 10 as recommended by Gujarati

(2003). This indicated that multicollinearity is not an issue to the regressions of these results.

Table 4.3 shows the results of VIF test which were reasonably good. In the models, the values of variance factor were within the range from 1.12 to 4.43 for SG to PCP, indicating the non-existence to multicollinearity among the variables of the model.

The value of Durbin Watson (D-W) statistics was 2.03 in the present study. The range value of Durbin Watson statistic is from 0 to 4 with an ideal value of 2 which indicates no correlation of errors. Furthermore, Makridakis and Wheelwright (1978) considered the acceptable value for Durbin Watson is from 1.5 and 2.5 to exhibit absence of autocorrelation.

4.4 Regression Analysis

Table 4.4

Regression results of the relationship between working capital management and profitability.

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	-7.031	6.391	-1.100	.274
CCC	0.03939	.011	3.456	.001*
ICP	-0.028	.008	-3.426	.001*
RCP	-.013	.006	-2.023	.046**

PCP	.010	.007	1.466	.146
SIZE	-.731	2.147	-.340	.734
SG	.035	.025	1.390	.168
DR	.222	.049	4.475	.000*

*Note: R-squared 0.337; Adjusted R - squared 0.283; Prob (F-statistic) 0.000

The regression results reveal an R-squared of 0.337, suggesting that the independent variables are able to explain only 33.7% of the variance for the dependent variable. The significance level of the F-statistic is a test of whether or not the whole regression is worthwhile. Since the present study shows that the significance level of the F-statistic is 0, the model is considered adequate.

The coefficient values of both CCC and DR are positively associated with ROA, and the probability values (P-value) of both CCC and DR are less than 0.05, indicating a significant relationship. The main result of this model is the positive significant relationship between ROA and CCC. It shows that longer CCC leads to higher profitability. In other words, when the CCC becomes longer, the profitability increases. This result of CCC is consistent with Sin *et al.* (2017), Bulin *et al.* (2016), Ademola (2014), Gill *et al.* (2011), Ali (2011), and Sharma and Kumar (2011). However, this is contradicted with Gul *et al.* 2013, Dong and Su (2010), Zariyawati *et al.* (2009), and Deloof (2003), whose studies reveal that CCC has a negative relationship with firm profitability. Therefore, the positive significant relationship of ROA with CCC leads to acceptance of alternative hypothesis (H_a) of

hypothesis 1 (H1), which states that there is a positive significant relationship between WCM (which is CCC), and profitability.

This study reveals that ICP is negatively associated with ROA, and the probability value (p-value) is less than 0.05, which is a significant relationship. There will be an improvement to the performance of the firms by keeping inventory for just a few days, as the performance of firms becomes higher when the ICP is lower. In other words, the shorter the period for the conversion of inventories into sales, the higher the profit tends to be. The result of ICP contradicts Soekhoe (2012), Uremadu *et al.* (2012), Sharma and Kumar (2011), and Mathuva (2010). However, it is highly supported by Deloof (2003), Albdwy *et al*. (2014), Gul *et al.* (2013), Dinku (2013), Mansoori & Muhammad (2012), Saghir *et al.* (2011), and Garcia and Martinez (2007). Therefore, the negative significant relationship of ROA with ICP leads to the acceptance of null hypothesis (H_0) of second hypothesis (H2), which stated that there is a significant relationship between ICP and profitability.

Furthermore, the RCP has a negative significant relationship with ROA, with a probability value (p-value) of RCP = 0.046, which is less than 0.05, indicating a significant relationship between ROA and RCP. This relationship shows that it is better for the firms to collect its receivables as soon as possible for greater profitability. The same results are also reported by Deloof (2003), Wasiuzzaman (2015), Sin *et al.* (2017), Ademola (2014), Ali (2011), and Lazaridis and Tryfonidis (2006). However, it is contradicted by Abuzayed (2012), and Falope and Ajilore (2009). The negative significant relationship between ROA and RCP leads to the

acceptance of null hypothesis (H_0) of the third hypothesis (H3), which states that there is a significant relationship between RCP and profitability.

Moreover, PCP has a positive relationship, but insignificant, with ROA, whose p-value is 0.146. Thus, the insignificance of the independent variable shows that payable is not a determinant factor for WCM. The standardized coefficient beta value is 0.010, which indicates that there is a positive relationship between PCP and ROA. It suggests that when companies delay payment to their suppliers or creditors, the money could be used to generate income and profit, provided it is used internally rather than paid out immediately. Therefore, hypothesis four (H4) is not supported.

These results are consistent with Sin *et al.* (2017), Yunos *et al.* (2015), Ademola (2014), Anojan *et al.* (2013), and Gill *et al.* (2010). However, it contradicts Misbah *et al.* (2015), Uremadu *et al.* (2012), Saghir *et al.* (2011), and Deloof (2003), as they contend that PCP has a negative and significant relationship with a firm's profitability.

The coefficient value of SG is positively associated with ROA, while SIZE is negatively correlated. However, both SG and SIZE are insignificantly correlated with ROA, which has a probability value (p-value) of more than 0.05. The insignificance of the control variables shows that sales growth (SG) and size of the firm (SIZE) are not the determinant factors for WCM.

Table 4.5 summarizes the results obtained in this study, as discussed in previous sections, by testing of hypothesis in order to ascertain those that the results accept and those the results reject.

Table 4.5

Summary of results

Variables	**Hypothesis**	**Correlation with ROA**	**Relationship with ROA**	**Decision**
CCC	$H1 = H_a$	positive	significant	Accept the alternative hypothesis 1
ICP	$H2 = H_0$	negative	significant	Accept the null hypothesis 2
RCP	$H3 = H_0$	negative	significant	Accept the null hypothesis 3
PCP	$H4 \neq H_0$ $H4 \neq H_a$	positive	insignificant	Reject the hypothesis 4

4.5 Summary of the chapter

Chapter 4 discusses the findings of this study. The results for descriptive statistics, correlation analysis, multicollinearity and autocorrelation test, and linear regression analysis are presented in this chapter. The results are analyzed with evidences from previous studies. The results are then summarized by testing of hypothesis in order to ascertain those that the results accept and those the results reject.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.0 Introduction

This study aims to explore the relationship that exists between working capital management and profitability. To achieve this purpose, four questions have to be answered. Each question is measured by processing the data using statistical regression. The results are then analyzed in order to fulfill the objectives of the study.

1. To analyze the relationship between cash conversion cycle and Malaysian Bumiputera-controlled companies' profitability.
2. To determine the relationship between inventory conversion period and Malaysian Bumiputera-controlled companies' profitability.
3. To evaluate the relationship between receivable collection period and Malaysian Bumiputera-controlled companies' profitability.
4. To determine relationship between payable collection period and Malaysian Bumiputera-controlled companies' profitability.

5.1 Summary of the findings

The impact of WCM on the profitability of BCCs in Malaysia for duration of 10 years from 2006 to 2015 is investigated. ROA is employed as the dependent variable, while the independent variables are CCC, ICP, RCP, and PCP.

Control variables are also included, namely firm size, sales growth, and debt ratio. A balanced panel data of ninety-four (94) Malaysian BCCs are utilized to understand the effect of WCM on firm's profitability.

The first finding discusses the relationship between a proxy of working capital component, i.e. CCC, and the proxy of BCCs' profitability which is ROA. The CCC is found to have a significant positive relationship with ROA. It shows that CCC can be optimized to boost profitability. Profitability increases as CCC becomes longer. This result is consistent with the result of a previous study by Sin *et al.* (2017) on Malaysian listed manufacturing companies for the period of six years from 2007 to 2012. The study used regression analysis on 122 companies, documenting a significant positive relationship between the CCC and a firm's profitability. Similarly, Bulin *et al.* (2016) reveals a significant positive relationship between the CCC and ROA. About 50 companies registered in Bursa Malaysia from 2011 to 2015 are used as sample of study, and they are analyzed using Pearson correlations and regression analysis.

The second finding describes the relationship between ICP as one of the working capital component proxies, and the profitability of BCCs. ICP is negatively associated with ROA, but the relationship is significant. It indicates that these companies are maintaining the low cost of storage to obtain higher profits. This is similar to findings of Albdwy *et al.* (2014), as well as Misbah *et al.* (2015). Albdwy *et al.* (2014) study of ninety (90) Shariah-compliant and non-Shariah-compliant listed companies using return on equity (ROE) as profitability indicator, covering a

five-year period starting from 2009 to 2013, shows a significant negative relationship between ICP and profitability of both types of companies. Misbah *et al.* (2015) concludes similar significant negative relationship in Malaysian companies with a sample of 189 listed companies from 2002 to 2011.

The third finding presents the relationship between RCP, a proxy of working capital, and the profitability of BCCs. The RCP has a negative significant relationship with ROA, indicating that these companies will be more profitable if they speed up the process of collecting the account receivables to avoid bad debts. Previous studies by Misbah *et al.* (2015), Wasiuzzaman (2015), and Sin *et al.* (2017) confirms this. Misbah *et al.* (2015) also reports that a study 189 listed companies in Kuala Lumpur Stock Exchange during the 2002-2011 period demonstrates a significant negative relationship between RCP and their profitability. Likewise, Wasiuzzaman (2015) examines the relationship between RCP and a firm's profitability. The result shows a significant adverse relationship between RCP and ROA – itself a proxy of profitability – in Malaysian manufacturing firms, with a sample of 160 firms from 2005 to 2010. Similarly as reported by Sin *et al.* (2017), a significant negative relationship exists between RCP and ROA.

Lastly, the final findings demonstrates the relationship between WCM proxy, i.e PCP, and the profitability of BCCs. PCP is found to have positive, albeit insignificant, relationship with ROA. The insignificance of the independent variable shows that PCP is not a determinant factor that affects WCM. Positive relationship of PCP indicates that these companies will be more profitable if they delay their payments.

The same results of insignificant relationship are consistent with other studies in Malaysia by Sin *et al.* (2017), and Yunos *et al.* (2015). Sin *et al.* (2017) finds an insignificant relationship between PCP and ROA as an indicator of profitability. Likewise, Yunos *et al.* (2015) asserts a lower degree of relationship of PCP on firm profitability, which is measured through ROA on a sample of 58 Malaysian listed government linked companies (GLCs) for a ten-year period from 2003 to 2014.

5.2 Conclusion and recommendation

WCM and its components have affected the profitability of BCCs in Malaysia. When the firms have low working capital, they tend to have high ROA. Based on the trade-off theory, profitability and liquidity of firms should be balanced. Liquidity is a prerequisite to enable firms to fulfill their short-term obligations, and continuous flow can be secured from profitable ventures. The importance of cash as a sustainable financial health indicator is not surprising given its significant role in business, since the business must run efficiently and profitably. On the contrary, too much concentration on liquidity will affect the profitability. Therefore, business entity managers will be diligent to achieve the desired trade-off between liquidity and profitability to maximize the firm value.

Previous studies proclaimed that an efficient management of liquidity stimulates high profitability (Deloof, 2003; Lazaridis and Tryfonidis, 2006). Meanwhile, many studies which examined this relationship mostly focused on developed firms. In this study, it should be noted that small firms in the growing markets and particularly in

small economies should focus more in their WCM as they may have limited access to funding, and less efficient of financial prediction.

In particular, from the researchers' findings on the relationship between WCM of a firm indicated by the CCC and profitability, the profitability of BCCs clearly has positive relationship with CCC. According to Abuzayed (2012), the positive relationship between companies' profitability and CCC demonstrates that firms with high profitability are having less motivation to manage their working capital. The finding was also in line with the study conducted by Halim *et al*. (2014) who revealed that the Bumiputera construction firms were less efficient in managing their resources/assets. Therefore, as a recommendation, it is essential for policy makers and regulators to stimulate and lead managers and shareholders to focus more on working capital by improving the awareness and transparency of investors.

5.3 Recommendation for future research

Future studies may explore more on comparative study between BCCs against non-BCCs should be carried out in future study. It should include primary and secondary data to produce meaningful empirical findings. Consequently, more in-depth information can be obtained from such studies primarily on the fundamentals of financial adopted by these two groups of companies. Moreover, this study only examined ICP, RCP, PCP and CCC as components of working capital. Other components of working capital such as market securities, net trade cycle and also external variable can also be analyzed later on to view their influence on BCCs profitability.

5.4 Summary of the Chapter

This chapter provides the overall summary of the results and conclusion. It is divided into four sections. The first section serves as an introduction which highlighted objectives of the study. The second section include a summary of the findings. Meanwhile, the third section provides the conclusion and recommendations of the study. Finally, the fourth section includes recommendations for future research.

REFERENCES

Abuzayed, B. (2012). Working capital management and firms' performance in emerging markets: the case of Jordan. *International Journal of Managerial Finance*, *8*(2), 155–179.

Ademola, O. J. (2014). Working Capital Management and Profitability of Selected quoted food and beverages manufacturing firms in Nigeria. *European Journal of Accounting Auditing and Finance Research*, *2*(3), 10–21.

Agha, H. (2014). Impact of Working Capital Management on Profitability. *European Scientific Journal*, *10*(1), 1857–7881. doi.org/10.11648/j.ijefm.20140206.17

Akinlo, O., & Olufisayo, O. (2011). The Effect of Working Capital on Profitability of Firms in Nigeria: Evidence from General Method of Moments (GMM). *Asian Journal of Business and Management Sciences*, *1*(2), 130–135. Retrieved from http://www.ajbms.org

Albdwy, F., Shah, M., & Salman, S. (2014). Impact of working capital management on the profitability of Shariah-Compliant and non-Shariah firms: The Case of Malaysia. *Capital Market Review*, *22*, 41–58.

Ali, S. (2011). Working Capital Management and the Profitability of the Manufacturing Sector: A Case Study of Pakistan's Textile Industry. *The Lahore Journal of Economics*, *16*(2), 141–178.

Aminudin, N. A. (2000). *Corporate Performance and Ownership Structure: A Comparative Analysis Between Bumiputera and Non-Bumiputera Controlled Companies* (Master thesis). Retrieved from University of Malaya Students Repository

Anojan, V., Arulalan, N., & Nimalathasan, B. (2013). Working Capital Management and Its Impact on Profitability : A Study of Selected Listed Beverage , Food and Tobacco Companies in Colombo Stock Exchange , Sri Lanka Abstract : *The Interntional Journal of Business & Management*, *1*(2), 10–17.

Appuhami, R. (2008). The Impact of Firms' Capital Expenditure on working Capital Management: An empirical Study across Industries in Thailand. *International Management Review*, *4*(1).

Ariff, M., & Abubakar, S. Y. (1999). *The Developing Economies*, *37*(4), 417–438. Retrieved from http://www.ide.go.jp

Asian Economic Review. (2000). *Bumiputera controlled companies left behind in economic recovery*. Retrieved from http://www.cdrindia.org

Bank Negara Malaysia. (n.d.). Retrieved from http://bnm.gov.my

Baveld, M. (2012). *Impact of Working Capital Management on the Profitability of Public Listed Firms in the Netherlands during the Financial Crisis*. Retrieved from University of Twente Student Thesis.

Bhattacharya, H. (2003). *Working capital management: Strategies and techniques*. New Delhi: Prentice Hall India Learning Private Limited.

Bottazzi, G., Dosi, G., Lippi, M., Pammolli, F., & Riccaboni, M. (2001). Innovation and corporate growth in the evolution of the drug industry. *International Journal of Industrial Organization*, *19*(7), 1161–1187. Retrieved from https://pdfs.semanticscholar.org

Brealey, R.A. and Myers, S.C. (2003), *Principles of Corporate Finance*, International Edition, 7th edition, New York: McGraw-Hill.

Bulin, S., Basit, A., & Muhammad Hamza, S. (2016). Impact of Working Capital Management on Firm ' S Profitability. *International Journal of Accounting and Business Management*, *4*(2). Retrieved from http://www.ftms.edu.my

Charitou, M., Lois, P., & Santoso, H. B. (2012). The Relationship Between Working Capital Management and Firm's profitability: A Empirical Investigation For An Emerging Asian Country. *International Business and Economics Research Journal*, *11*(8), 839–849.

Charitou, M. S., Elfani, M., & Lois, P. (2010). The relationship between working capital efficiency and profitability. *Journal of Business & Economics Research*, *8*(12). doi:10.19030/jber.v8i12.782

Ching, H. Y., Gerab, F., & Novazzi, A. (2011). Relationship Between Working Capital

Management and Profitability in Brazilian Listed Companies. *Journal of Global Business & Economics*, *3*(1), 74–86. Retrieved from https://www.researchgate.net

Cowling, M. (2004). The Growth - Profit Nexus. *Small Business Economics*, *22*(1), 1–9. Retrieved from https://link.springer.com

Dong, H. P., & Su, J. (2010). The Relationship between Working Capital Management and Profitability: A Vietnam Case. *International Research Journal of Finance and Economics*, (49). doi:10.1017/CBO9781107415324.004

Duellman, S. (2006). *Evidence on the role of accounting conservatism in corporate governance* (Doctoral dissertation). Retrieved from https://surface.syr.edu

Deloof, M. (2003). Does working capital management affects profitability of Belgian firms? *Journal of Business Finance and Accounting*, *30*(3), 573–587. doi:10.1111/1468-5957.00008

Dev, P., George, S. V., & Ariff, M. (2006). Government Public Policy, Regulatory Intervention, and Their Impact on IPO Underpricing: The Case of Malaysian IPOs. *Journal of Small Business Management*, *44*(1), 81–98.

Dinku, T. (2013). Impact of Working Capital Management on Profitability of Micro and Small Enterprises in Ethiopia : The Case of Bahir Dar City Administration. *International Journal of Accounting and Taxation*, *1*(1), 15–24.

Dittmar, A., Mahrt-Smith, J., & Servaes, H. (2002). *Corporate Liquidity*. London: Centre for Economic Policy Research.

Dong, H. P., & Su, J. (2010). The Relationship between Working Capital Management and Profitability: A Vietnam Case. *International Research Journal of Finance and Economics*, (49). doi:10.1017/CBO9781107415324.004

Falope, O. I., & Ajilore, O. T. (2009). Working Capital Management and Corporate Profitability: Evidence from Panel Data Analysis of Selected Quoted Companies in Nigeria. *Research Journal of Business Management*, *3*(3), 73–84. doi:10.3923/rjbm.2009.73.84

Garcia, P. J., & Martinez, P. (2007). Article information : *International Journal of Managerial Finance*, *3*(2), 164–177. doi:10.1108/JHOM-09-2016-0165

Gill, A., Biger, N., & Mathur, N. (2011). The Effect of Capital Structure on Profitability: Evidence from the United States. *International Journal of Management*, *28*(4), 3–15.

Gill, A., Biger, N., Mathur, N., Palmer, S., Street, W. H., & Vb-k, B. C. (2010). The Relationship Between Working Capital Management And Profitability : Evidence From The United States. *Business and Economics Journal*, *2010*(1), 1–9. doi:10.18052/www.scipress.com/ILSHS.20.14

Greiner, L. E. (1972). Evolution and Revolution as Organizations Grow. *Harvard*

Business Review, *50*(4), 37–46. Retrieved from https://ils.unc.edu

Gujarati, D. N. (2003). *Basic Econometrics* (4th Edition). New York: McGraw-Hill.

Gul, S., Khan, M. B., Rehman, S. U., Khan, M. T., Khan, M., & Khan, W. (2013). Working Capital Management and Performance of SME Sector. *European Journal of Business and Management*, *5*(1), 60–69. doi:10.5897/AJBM2013.6899

Halim, M. S., Haniff, M. S., Junoh, M. Z., & Osman, A. (2014). Financial performance and the management issues of Bumiputera construction firms in the Malaysian construction industry. *Journal of Scientific Research & Reports*, *3*(9), 1190–1202. Retrieved from http://www.journalrepository.org

Hillier, D., Ross, S., Westerfield, R., Jaffe, J., & Jordan, B. (2010). *Corporate Finance*. Berkshire: McGraw-Hill.

Huang, P., Zhang, Y., Deis, D. R., & Moffitt, J. S. (2009). Do artificial income smoothing and real income smoothing contribute to firm value equivalently? *Journal of Banking and Finance*, *33*(2), 224–233. doi:10.1016/j.jbankfin.2008.07.012

Jang, S. C., & Park, K. M. (2011). Inter-relationship between firm growth and profitability. *International Journal of Hospitality Management*, *30*(4), 1027–1035.

Johari: 132 firms listed on Bursa are bumi-controlled companies. (2015, October 1). *The Star Online*. Retrieved from https://www.thestar.com.my/business/business-news/2015/10/01/johari-132-firms-listed-on-bursa-are-bumicontrolled-companies/

Karadagli, E. C. (2012). The Effect of Working Capital Management on the Profitability of Turkish SMEs. *British Journal of Economics, Finance and Management Science*, *5*(2), 36–44. doi:10.1007/s13398-014-0173-7.2

Kaur, H. V., & Singh, S. (2013). Managing Working Capital Efficiency in Capital Goods Sector in India. *Global Business Review*, *14*(2), 343–355. doi:10.1177/0972150913477526

Keown, A., Martin, J., Petty, J. W., & Scott, D. (2005). *Financial Management Principles and Application* (10th Edition). New Jersey: Pearson Prentice Hall.

Khanqah, V. T., Elham, G., Mohsen, A. K., & Mohammadreza, E. (2012). Working capital management and corporate performance: evidence from Iranian companies. *Social and Behavioral Science*, *62*, 1313–1318.

Lazaridis, I., & Tryfonidis, D. (2006). " The relationship between working capital management and profitability of listed companies in the Athens Stock Exchange ." *Journal of Financial Management and Analysis*, *30*(76), 1–12.

Makridakis, S. G., & Wheelwright, S. C. (1978). *Forecasting: methods and*

applications. California: Wiley.

Malik, M. S., & Bukhari, M. (2014). The Impact of Working Capital Management on Corporate Performance : A Study of Firms in Cement , Chemical and Engineering Sectors of. *Pakistan Journal of Commerce and Social Sciences*, *8*(1), 134–148.

Mansoori, E., & Muhammad, J. (2012). Effect of Working capital management on firm 's profitability: Evidence from Singapore. *Interdisciplinary Journal of Contemporary Research in Business*, *4*(5), 472–486.

Marimuthu, M. (2010). Bumiputera-Controlled Companies: Performance Evaluation Using A Non-Parametric Approach. *International Journal of Economics and Finance*, *2*(2), 178–185. doi:10.5539/ijef.v2n2p178

Markman, G. D., & Gartner, W. B. (2002). Is extraordinary growth profitable a study of inc. 500 high-growth companies. *Entrepreneurship Theory and Practice*, *27*(1). doi: 10.1111/1540-8520.t01-2-00004

Mathuva, D. M. (2010). The Influence of Working Capital Management Components on Corporate Profitability: A Survey on Kenyan Listed Firms. *Research Journal of Business Management*. doi:10.3923/rjbm.2010.1.11

Mohamad, N. E. A., & Saad, N. (2010). Working Capital Management : The Effect of Market Valuation and Profitability in Malaysia. *International Journal of Business and Management*, *5*(11), 140–147. doi:10.5539/ijbm.v5n11p140

Misbah, S., Anjum, M. J., Aqdas, M. I., Marwat, N. K., & Khan, M. A. R. (2015). The Relationship between Working Capital Management and Profitability: Evidence from Listed Companies in Kuala Lumpur Stock Exchange (KSE) Malaysia. *International Journal of Information Processing & Management*, *6*(1), 104. Retrieved from http://search.ebscohost.com

Needles, B. E., Powers, M., & Frigo, M. L. (2008). *Performance measurement and executive compensation: Practices of high-performance companies*. *Studies in Managerial and Financial Accounting*. Bingley: Emerald Group Publishing Limited.

Niresh, J. A., & Velnampy, T. (2014). Firm Size and Profitability: A Study of Listed Manufacturing Firms ed Manufacturing Firms in Sri Lanka. *International Journal of Business and Management, 9*(4), 57–64. doi:10.5539/ijbm.v9n4p57

H., Abdullatif, M., & Alhajjar, M. (2011). Cash conversion cycle and firm's performance of Japanese firms. *Asian Review of Accounting*, *19*(2), 147–156. doi: 10.1108/13217341111181078

Nobanee, H., & Alhajjar, M. (2009). A note on working capital management and corporate profitability of Japanese firms. Available at: http://ssrn.com/abstract¼1471230.

Nimalathasan, B. (2010). Working capital management and its impact on profitability : A study of selected listed manufacturing companies in Sri Lanka. *Information*

Management, *12*, 76–83.

Ozgulbas, N., Koyuncugil, A. S., & Yilmaz, F. (2006). Identifying the Effect of Firm Size on Financial Performance of SMEs. *The Business Review*, *6*(1), 162–167.

Qazi, H. A., Shah, S. M. A., Abbas, Z., & Nadeem, T. (2011). Impact of working capital on firms' profitability. *African Journal of Business Management*, *5*(27), 11005–11010. doi: 10.5897/AJBM11.326.

Quayyum, S. T. (2011). Effects of working capital management and liquidity: Evidence from the cement industry of Bangladesh. *Journal of Business and Technology (Dhaka)*, *4*(1), 37–47. Retrieved from http://www.banglajol.info

Padachi, K. (2006). Trends in Working Capital Management and its Impact on Firms' Performance: An Analysis of Mauritian Small Manufacturing Firms. *International Review of Business Research Papers*, *2*(2), 45–58.

Raheman, A., & Nasr, M. (2007). Working capital management and profitability- case of Pakistani Firms. *International Review of Business Research Papers*, *3*(1), 279–300. Retrieved from https://www.researchgate.net/publication/228727444

Raheman, A., Afza, T., Qayyum, A., & Bodla, M. A. (2010). Working capital management and corporate performance of manufacturing sector in Pakistan. *International Research Journal of Finance and Economics*, *47*(1), 156–169.

Ray, S. (2012). Evaluating the Impact of Working Capital Management Components on Corporate Profitability : Evidence from Indian Manufacturing Firms. *International Journal of Economic Practices and Theories*, *2*(3), 127–136.

Raza, M. W. (2013). Affect of Financial Leverage on Firm Performance. Empirical Evidence from Karachi Stock Exchange. *Canadian Journal of Regional Science*, *50383*(Septermber 2013), 1–20. doi:10.1227/01.NEU.0000349921.14519.2A

Reid, G. C. (1995). Trajectories of Small Business Financial Structure. *Small Business Economics*, *20*(4), 273–285. doi:10.1023/A:1022915308274

Rimo, A., & Panbunyuen, P. (2010). *The Effect Of Company Characteristics on working Capital Management* (Master thesis). Retrieved from http://www.diva-portal.org

Riyanto, B. (2001). *Dasar-dasar pembelanjaan perusahaan*. Yogyakarta : BPFE.

Saghir, A., Hashmi, F. M., & Hussain, M. N. (2011). Working Capital Management and Profitability: Evidence from Pakistan Firms. *Interdisciplinary Journal of Contemporary Research In Business*, *3*(8), 1092–1105. doi:10.1007/s40622-014-0043-3

Salim, M., & Yadav, R. (2012). Capital Structure and Firm Performance: Evidence from Malaysian Listed Companies. *Procedia - Social and Behavioral Sciences*, *65*(ICIBSoS), 156–166. doi:10.1016/j.sbspro.2012.11.105

Sharma, A. K., & Kumar, S. (2011). Effect of Working Capital Management on Firm Profitability. *Global Business Review*, *12*(1), 159–173. doi:10.1177/097215091001200110

Sin, H. N., Chen, Y., Tze, S. O., & Boon, H. T. (2017). The Impact of Working Capital Management on Firm ' s Profitability : Evidence from Malaysian Listed Manufacturing Firms. *International Journal of Economics and Financial Issues*, *7*(3), 662–670.

Singh, P. K. (2004). Working capital management in Lupin laboratories Ltd. -A case study. *Management Accountant Calcutta*, *39*(7), 534–541.

Smith, K. (1980). *Profitability versus Liquidity Tradeoffs in Working Capital Management, Readings on the Management of Working Capital*. New York, NY: West Publishing Company.

Soekhoe, S. (2012). *The effects of working capital management on the profitability of Dutch listed firms* (Master thesis). Retrieved from doi:10.3846/16111699.2011.651626

Subramanyam, K. R. (2014). *Financial Statement Analysis* (11th Editi). Singapore: McGraw-Hill.

Treasury of Malaysia. (2017). *Kriteria Pemberian Taraf " Bumiputera Controlled Public Listed Companies."* (Publication No. LB 1.1). Retrieved from

1pp.treasury.gov.my/topik/fail/41/muat-turun

Uremadu, S. O., Egbide, B.-C., & Enyi, P. E. (2012). Working Capital Management, Liquidity and Corporate Profitability Among Quoted Firms in Nigeria Evidence from the Productive Sector. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *2*(1), 80–97. Retrieved from http://ideas.repec.org/a/hur/ijaraf/v2y2012i1p80-97.html

Usama, M. (2012). Working Capital Management and its Affect on firm's Profitability and Liquidity : in other Food Sector of (KSE) Karachi Stock Exchange. *Oman Chapter of Arabian Journal of Business and Management Review*, *1*(12), 62–73. Retrieved from doi:10.12816/0002232

Van Horne, J. C., & Wachowicz, J. M. (2009). *Fundamentals of Financial Management* (13th editi). Harlow: FT Prentice Hall.

Wasiuzzaman, S. (2015). Working capital and firm value in an emerging market. *International Journal of Managerial Finance*, *11*(1), 60–79. doi:10.1108/IJMF-01-2013-0016

Wasiuzzaman, S., & Arumugam, V. C. (2013). Determinants of Working Capital Investment: A Study of Malaysian PublicListed Firms. *Australasian Accounting, Business and Finance Journal*, *7*(2), 63–83. doi:10.14453/aabfj.v7i2.5

Yatim, P., Kent, P., & Clarkson, P. (2006). Governance structures, ethnicity, and audit

fees of Malaysian listed firms. *Managerial Auditing Journal*, *21*(7), 757–782. doi:10.1108/02686900610680530

Yunos, R. M., Nazaruddin, N., Ghapar, F. A., Ahmad, S. A., & Zakaria, N. B. (2015). Working Capital Management in Malaysian Government-linked Companies. *Procedia Economics and Finance*, *31*(15), 573–580. doi:10.1016/S2212-5671(15)01203-4

Zariyawati, M. A., Annuar, M. N., & Pui-San, N. (2016). Working Capital Management Determinants of Small and Large Firms In Malaysia. *Int. Journal of Economics and Management*, *10*(November), 365–377. Retrieved from http://www.ijem.upm.edu.my

Zariyawati, M. A., Annuar, M. N., & Taufiq, H. (2009). Working Capital Management and Corporate Performance: Case of Malaysia. *Journal of Modern Accounting and Auditing*, *5*(November 2009). Retrieved from https://www.researchgate.net/publication/259704839